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Wireless Without Wi-Fi

Long expected to be the next big wireless standard post-Wi-Fi, WiMAX has finally arrived. This month we look at the 802.16e specification (aka WiMAX Mobile) and EVDO, a chief competitor that has gained steam while the WiMAX standard was waiting in the wings for final approval.

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EDITOR'S NOTE

TWO RECENT LESSONS in wireless and mobile tech boil down to this: Don't believe the hype—but don't ignore it, either. Hype is similar to a stereotype in that it's usually based on some degree of truth, however small; is, on the contrary, sometimes completely fabricated; and is by definition excessive and extended beyond the confines of reality.

Hype Lesson No. 1: Mobile WiMAX

The hype machine built around the WiMAX family of standards (IEEE 802.16), including the mobile version (802.16e), lost its luster as delays in ratification dragged on. In the interim, service providers began pushing pre-3G wireless broadband alternatives such as the GPRS (General Packet Radio Service)-based EDGE (Enhanced Data Rates for GSM [Global System for Mobile Communications]) and the even-faster EVDO (Evolution Data Optimized). But now that mobile WiMAX is here, it could actually live up to the hype that originally surrounded it. Sometimes something takes longer than expected to be accomplished because it's actually being done *right*.

Mobile WiMAX provides data transfer rates of up to 5Mbps (megabits per second) over several miles, compared with about 2Mbps with EDGE and 2.4Mbps with EVDO. And already Intel, Motorola, and Nokia figure prominently in the list of companies promising to dive headlong into mobile WiMAX. For more information, check out this month's cover stories about mobile WiMAX ("WiMAX Goes Mobile," page 34) and EVDO ("EVDO-lution," page 38). And for a look at where mobile phones are at in relation to 3G promises, take a look at "3G, At Last" (page 42).

Hype Lesson No. 2: Mobile Entertainment

Countless mobile software and entertainment companies have been trying for many months to convince consumers that what they really want on their devices is mobile TV. But thus far the concept is tanking, with surveys reporting consumer disinterest. Some recent news articles have even claimed mobile TV as DOA. However, it now seems clear that as companies step up to the plate with truly smart mobile entertainment offerings at reasonable prices, their services are likely to win over customers who have newer devices with higher-speed wireless capabilities. A few cases in point include Verizon Wireless's V CAST (see "Mobile News," page 6) and Amp'd Mobile (see "EVDO-lution," page 38).

These and other offerings are smart because they offer a full deck of goodies at decent rates. Rather than get nickel-and-dimed by paying a modest annual fee for each in a piecemeal assortment of products, I'd gladly pay a higher rate for one service that does it all.

So, when faced with hype over any new or upcoming product or technology, it's wise to keep disbelief intact. But look for that kernel of truth that might be hidden behind the heavy-rotation ads, Flash animations, and market-speak. In some cases the eventual products are worth the wait.

Until next month,

Calvin Clinchard
Publication Editor
cal-clinchard@pctoday.com

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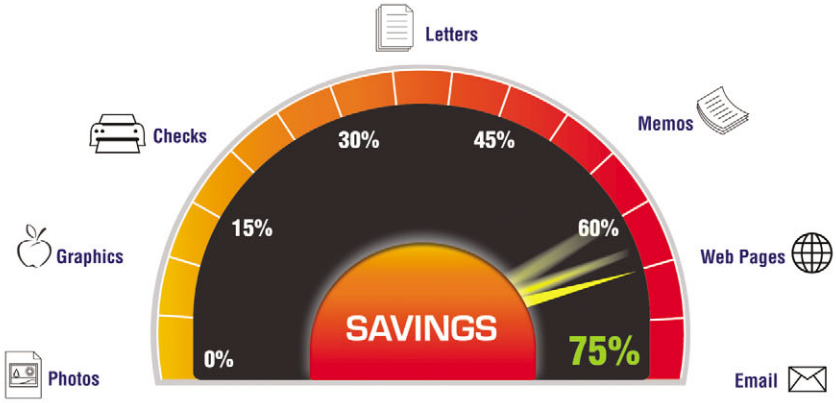

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Mobile News

Compiled by Cal Clinchard

Patents, Lawsuits & You

Lawsuits brought by one company against another over alleged patent infringement have become a dime a dozen. That a new lawsuit will be filed in a given day is about as reliable as the earth continuing to spin. But the sun sometimes rises and sets hundreds of times before any given suit is decided or settled. This leads to ongoing anxiety for the companies involved and often their customers. (BlackBerry users know this all too well.) Here's a look at some very recent lawsuits and what they mean to you.

Microsoft® vs. Visto

Plaintiff: Visto
Defendant: Microsoft
At issue: Three patented wireless email technologies Visto claims Microsoft incorporated into Windows Mobile 5.0.
What it means to you: Microsoft's newly launched Direct Push email (which Cingular will carry in the U.S.) is a big threat to the likes of Visto, Research In Motion, and Good Technology because it doesn't require middleware or more servers in addition to a company's Exchange server. With the kind of push Microsoft is making, so to speak, the company is more likely to win or settle than change its software.

Good vs. Visto

Plaintiff: Visto
Defendant: Good Technology
At issue: Four patents covering methods for synchronizing email and providing remote access to data.
What it means to you: Visto is seeking a permanent injunction against Good Technology, which could spell trouble for you if your Palm Treo, HP iPAQ smartphone, or some other device uses GoodLink for email access and information management. GoodLink is a major push email player, though, so a settlement or workaround is possible in the event Good Technology loses the suit.

Citrix® vs. 01 Communique

Plaintiff: 01 Communique Laboratory
Defendant: Citrix Systems
At issue: A patent issued in 2005 for a technology to provide secure remote access between one computer and another via the Internet.
What it means to you: Because remote access is at the heart of these companies' leading products (01 Communique's I'mInTouch and Citrix's GoToMyPC), it will probably be a long time before the dust clears from this battle. Predicting an outcome is tricky because 01 Communique isn't specifying exactly what the infringements are, and the suit involves 42 separate claims.

V CAST Has Landed

Mobile phones capable of amazing audio/video feats have flooded out to consumers in the past year, but decent content has been slow in coming. But 2006 will see an explosion of content as wireless companies are finally figuring out how to make use of newer mobile phones' multimedia capabilities. Case in point: Verizon Wireless (www.verizonwireless.com), which recently launched its V CAST service. Sure, Motorola and Apple gave us the MotoROKR with iTunes (direct.motorola.com/hellomoto/rokr), and Sony Ericsson has done well with its Walkman Phone line (www.sonyericsson.com/walkmanphone). But V CAST brings together music, games, and video (NBC, ESPN, and others offer compatible clips). To use V CAST you need Verizon Wireless service, of course, with a V CAST-capable phone. Models with EVDO (Evolution Data Optimized) high-speed wireless Internet let you stream music and video live. Browse the V CAST site (getitnow.vzwshop.com) for current pricing.

V CAST

Web News

The Whole World Wide Web In Your Hands

The Internet has become so intertwined with our daily lives that it's easy to forget that we weren't doing a whole lot online a mere 10 years ago. And the sites that populated the Web back then were, for the most part, not designed with excitement in mind. But now that Web sites have become so big, bold, animated, and interactive, the challenge comes in making content easy to view on mobile devices. Two mobile browsers are making news on that front: Opera Mini and Mozilla's Minimo.

Opera Mini

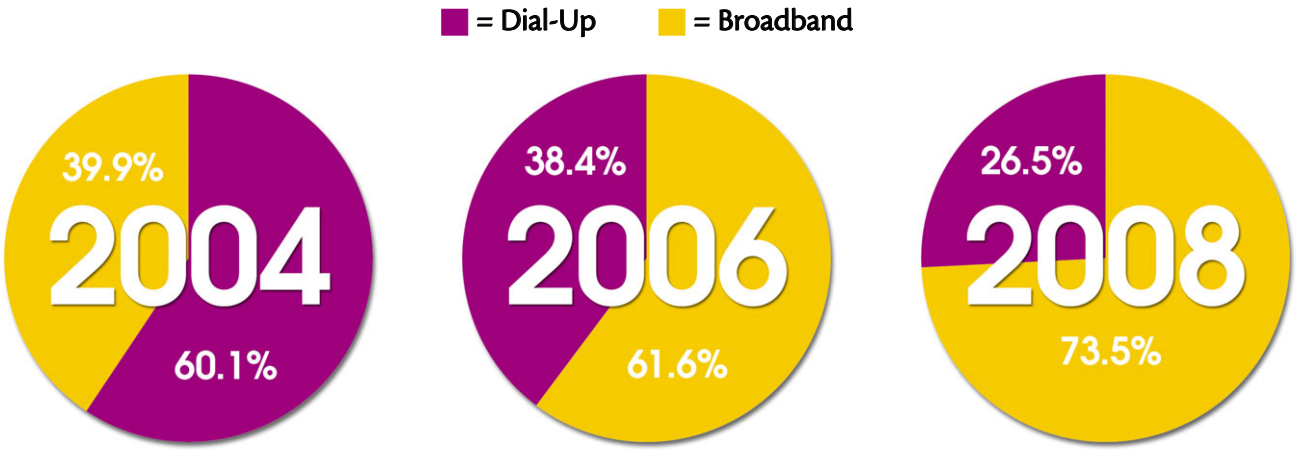
The developers behind the full-size, free-for-download Opera Web browser (www.opera.com) created Opera Mini with handheld devices in mind. The Opera Mini browser uses Opera's trademarked Small-Screen Rendering technology to turn a Web page into long vertical strips. The browser arranges these strips so you can scroll up and down to view the page and not have to scroll horizontally. You can download Opera Mini free by pointing your device's WAP browser to mini.opera.com and following the instructions. Opera Mobile, a browser that works with Windows Mobile and Symbian S60 devices, is also available.

Minimo

If you've joined the Firefox revolution and you use that browser on your desktop computer, you'll be happy to know that the Mozilla Foundation (www.mozilla.org) has built a miniaturized version of Firefox for use on Windows Mobile devices. The small-screen browser, called Minimo (www.mozilla.org/projects/minimo), is available as a free download (visit the site, click FAQ, and use the links under the headings Where Can I Download Minimo? and How Do I Install Minimo?). Minimo is a small version of a full-scale Web browser (but sorry, no tabs); you can access anything you'd normally view on a bigger screen. And as with Firefox and Internet Explorer, you can use Minimo and Pocket Internet Explorer on the same device.

Dial-Up Not Dead Yet

According to a recent report from Yankee Group, dial-up isn't dead by a long shot. And the reason behind the resistance is cost. Look for more ISPs raising dial-up charges in an effort to push customers toward broadband. America Online did just that in February when it increased the dial-up rate by $2 to match the $25.90 monthly rate for broadband. The following charts are based on Yankee Group's October 2005 survey of U.S. households with Internet connections, including reported figures for 2004 and projected figures for 2006 and 2008.



Portable Gear

accessories that go anywhere

Compiled by Carmen Carmack

In this month's issue, we feature an assortment of new and improved accessories that can make your job easier, whether you work from home, in the office, or on the road.

Altec Lansing AHS302usb

The new AHS302usb headset from Altec Lansing ($39.95; www.alteclansing.com) features dual connectivity and a behind-the-neck headband. Because it comes with a USB connector and a 3.5mm connector, you can easily plug the headset into a notebook computer, a desktop computer, or a portable music device.

The earphones include 36mm neodymium speakers, and the headset also has an integrated noise-canceling microphone. A built-in volume control lets you adjust the speaker audio level and the microphone volume. Designed for music, Internet voice chat, speech recognition, and gaming, you can use the headset on the go and in the office.

Eleksen ElekTex Smart Fabric Keyboard

If you need a keyboard for your Symbian smartphone or Microsoft Windows Mobile 2003 device, consider the ElekTex Smart Fabric wireless keyboard from Eleksen (www.eleksen.com). The keyboard design resembles a notebook computer keyboard with a 63-key QWERTY layout, ALT shortcut keys, and full-size cursor keys. (Although pricing was unavailable at press time, Eleksen expects several accessory distributors and retailers to sell the product.)

This unique 100% fabric keyboard is water repellent, durable, and washable, and you can even roll it up for storage. The keyboard weighs less than 3 ounces, and when unfolded, it measures 12 x 4.5 inches. ElekTex Smart Fabric Keyboard connects to mobile devices via Bluetooth, and it runs for an average of 10 hours on two AAA batteries. Eleksen ships a PDA/smartphone stand with the keyboard.

RoadWired Skooba Satchel

If you're looking for a colorful and convenient notebook bag, check out the new Skooba Satchel from RoadWired ($99.95; www.roadwired.com). The bag comes with numerous compartments, including the main notebook compartment that's lined with shock-absorbing material called Air Square. The computer compartment includes a retention strap and can accommodate a notebook with a 17-inch screen.

In addition to the notebook compartment, the Skooba Satchel features compartments for equipment such as media, a cell phone, cords, and other mobile office paraphernalia. In addition, the bag has a divided section, a water bottle holder, a zippered magazine pocket, and an oversized shoulder pad. You can also purchase add-on components that clip onto the Skooba Satchel. The bag comes in four color combinations: black/blue, gray/orange, olive/red, and tan/black.

Kensington PilotMouse Laser Wireless Mini

Kensington's new PilotMouse Laser Wireless Mini ($49.99; us.kensington.com) is a portable mouse that features next-generation laser technology. Kensington says the laser mouse features advanced laser tracking that provides unrivaled precision and tracking on almost any surface with 20 times the surface sensitivity of an optical mouse.

As a portable mouse, the PilotMouse Laser Wireless Mini has a wireless range of as much as 30 feet and comes with a 2.4GHz receiver that attaches to the base. The mouse includes three programmable buttons, a scroll wheel, and right- and left-hand compatibility. The mouse uses two AA batteries, giving the device enough operating power for approximately nine months.

I/OMagic GigaBank 8.0

The newest portable storage device from I/OMagic (www.iomagic.com) is the GigaBank 8.0 ($199.99). The USB 2.0 device offers 8GB of storage space in a portable unit that weighs less than 2 ounces and measures 2.5 x 0.5 x 2 inches (HxWxD). Because it obtains power through the USB connection, the GigaBank 8.0 does not require AC power or a battery. The USB connector swivels into the device's enclosure, and I/OMagic includes a USB extension cable for hard-to-reach places.

The GigaBank 8.0 is compatible with Windows 98SE/Me/2000/XP computers. In addition to the USB extension cable, the device comes with a software CD, a driver CD, and documentation. I/OMagic provides a one-year warranty for the device.

First International Digital irock! WiFi Sentry

The irock! WiFi Sentry ($19.98) from First International Digital (www.myirock.com) makes it easy to locate wireless access points when you are out of the office. The device discovers access points in less than one-half second after you push the detection button. It looks for 802.11b and 802.11g networks within a 300-foot range, and the detector filters out false readings from other devices such as cordless phones and microwaves.

The irock! WiFi Sentry comes with a built-in keychain attachment. It measures 2.25 x 1.2 x 0.43 inches (HxWxD) and offers four LEDs (light-emitting diodes) to indicate signal strength. The detector operates on two CR2032 batteries, which you can replace as needed.

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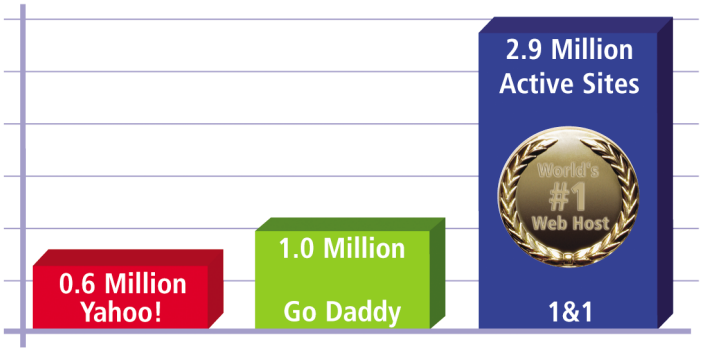

Source: Netcraft Ltd – www.netcraft.com Febuary 1, 2006

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Included Domains	2	1	$1.99/year with purchase
Web Space	10,000 MB	5,000 MB	10,000 MB
Monthly Transfer Volume	500 GB	200 GB	500 GB
E-mail Accounts	1,000 IMAP or POP3	200 POP3	1,000 POP3
Mailbox Size	2,000 MB	2,000 MB	10 MB
Website Builder	12 pages	✓	Freeware
Photo Gallery	✓	✓	✓
Dynamic Web Content	✓	✓	—
Web Statistics	✓	✓	✓
Chat Channels	✓	—	✓
Database	25 MySQL (Linux)	MySQL support	25 MySQL (Linux)
Search Engine Tools	✓	Extra charge applies	$29.95/year additional
PHP Support (Linux)	✓	✓	✓
Perl Support (Linux)	✓	✓	✓
Software suite ($600 value)	✓	—	—
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Web Destinations

Wikipedia

So at your best friend's recommendation, you finally started watching "Lost." You were instantly hooked but at the same time lamented the fact that you had missed well over an entire season's worth of episodes. Or maybe you recently caught what you're almost certain is a mutant case of tonsillitis and want to find out just exactly what kind of agony is in your future.

At Wikipedia (www.wikipedia.org), you have a convenient source of information covering television shows, mutant illnesses, and, well, pretty much anything else you can think of. And best of all, you can access it from anywhere in the world, as long as you have a computer with an Internet connection.

The Rundown

Wikipedia launched in January 2001, and since then has grown to contain millions of articles, including nearly 1 million in English alone. The free site is open source, so anyone can read its content as well as edit existing articles or create new articles. This also means that all sorts of individuals, ranging from "expert scholars to casual readers," monitor the site.

Obviously, this kind of system has some tremendous advantages. Foremost among them is Wikipedia's range of writers and editors, many of whom speak different languages. Their constant contributions and maintenance of Wikipedia slowly but surely make each article less biased and updated with the most current and accurate information.

However, the system isn't without drawbacks. Because anyone can edit existing Wikipedia articles, they'll always

be open to vandalism attempts. Wikipedia's editors are generally quite vigilant and do a good job of keeping the articles free of bias and malicious content, but there is always the chance that you'll encounter an article that contains flawed or purposefully misguiding information.

A recent example of such an occurrence that bears mentioning involved the case of renowned journalist John Seigenthaler Sr. In May 2005 an anonymous Wikipedia user posted defamatory content linking Seigenthaler to the Kennedy assassinations and Soviet Russia. The information remained online for several months before a friend of Seigenthaler's discovered it and notified him. Seigenthaler would later decry the site as a "flawed and irresponsible research tool."

Even so, according to the scientific journal *Nature*, Wikipedia is remarkably close to the Encyclopedia Britannica in terms of accuracy.

What Do You Want To Know?

Upon browsing to the Wikipedia home page, the site prompts you to select a preferred language. You can choose from English, Spanish, German, French, Japanese, Dutch, Polish, Italian, or Swedish. You'll find the most articles in the English version of Wikipedia, but with the exception of Spanish, you'll still find articles numbering in the hundreds of thousands when you explore the site in other languages.

Click your preferred language, and you arrive at Wikipedia's Main Page. You'll immediately find a plethora of interesting information. Each day the site displays a featured article on the Main Page, along with current events, excerpts from the newest Wikipedia articles, and notable anniversaries for historical events.

You'll also discover links to more language options as you scroll down toward the bottom of the page, in case you didn't see the one you were looking for when you first visited the site. Keep in mind that you'll find substantially fewer Wikipedia articles when exploring the site in these languages, particularly when searching more obscure tongues.

The feature that will be most interesting to you, initially at least, is of course the Wikipedia Search. Just type what you're looking for into the Search field and click Go to find the article or short list of articles that most closely matches the word(s) you searched for. Clicking the Search button returns all articles in which the word(s) appear, ranked by relevancy. For the purposes of our example, we decided to search for information about the American Civil War.

Wikipedia's search results display a brief summary about the subject you entered. As you scroll down the page, you'll find a table of contents containing links that enable you to skip to any part of the article that you wish. In our American Civil War example, for instance, we could instantly go directly to parts of the article

pertaining to Southern nationalism, division of the country, a narrative of the war, analysis of the outcome, and more.

Depending on how established an article is and the number of contributors and editors maintaining it, you may find a quick list of facts in the upper-right section of an article. In our search of American Civil War, we found photos and artwork, the names of significant leaders (Abraham Lincoln, Robert E. Lee, etc.), important dates and locations, and statistics (such as strength and casualties).

One really cool thing about Wikipedia articles is that they're often loaded with cross-referenced material. As you read through an article, you may find that it raises interesting subjects about which you'd like to know more. If you were using a traditional book encyclopedia, this would most likely require you to dig out a separate volume and leaf over to the appropriate page. Using Wikipedia, however, is as simple as clicking a link. When we came across General William Tecumseh Sherman, for example, all we had to do was click the hyperlink for his name. This took us instantly to a separate article dedicated to General Sherman.

At the conclusion of a Wikipedia article, you'll find listings for further reading. These may include links to other related Wikipedia articles, a list of references cited in the article, and links to off-site resources for learning more about the topic. Here we found a number of interesting resources, including a link to a PBS documentary about the American Civil War.

Something Ain't Right

Perhaps you're a die-hard fan of Aerosmith, and after reading through a Wikipedia entry about Aerosmith, you're convinced that something is off. (You don't care what anyone says; you're positive that "Done With Mirrors" was the group's best album ever. Surely there are others who agree.)

You'll start your search at the Wikipedia Main Page, where you'll also find links to the day's featured article and current events.

Wikipedia articles include loads of useful information, pictures, and a table of contents for easy navigation.

For terms such as "Jupiter" that may have more than one connotation, Wikipedia provides a Disambiguation Page that enables you to choose articles pertaining to the meaning of the word you're looking for.

Well, editing articles in Wikipedia is a cinch. If you find any part of an article erroneous or vandalized, just click the Edit link at the top of the offending part of the article. You'll be taken to an editing page where you can make changes as you see fit. Keep in mind that your edits need to be verifiable and that Wikipedia will record your IP address.

So, on second thought, you've cooled your jets a little and decided not to haphazardly amend the article to proclaim "Done With Mirrors" was the best album in the history of rock and roll, nay, the history of music. But you still want to know why no one seems to feel as passionately about this as you do. Why not take advantage of an opportunity to discuss your feelings with the Wikipedia community of Aerosmith aficionados? Simply click the Discussion link at the top of the article, and Wikipedia takes you to a Web page containing various discussion topics posted by other viewers of the article in question. Just click Edit to add your own comments to a discussion thread or click the link resembling a plus symbol (+) at the top of the page to post your own, new point of discussion.

For more information about editing and writing Wikipedia articles, refer to the "Be A Wikipedia Writer" sidebar.

Sister Projects

As you've no doubt surmised by now, Wikipedia and its governing principles are huge. Huge enough, in fact, that the Wikimedia Foundation, which hosts Wikipedia, has also seen fit to host several other free-content, multilingual services. You'll find links to each one at the bottom of the Wikipedia Main Page. As with Wikipedia, you can edit the content of the sister projects as you see fit. Here's a quick look at what you'll find:

Be A Wikipedia Writer

As an expert underwater basket weaver, maybe you explored Wikipedia and found it to be woefully lacking in information about your craft. Wikipedia is an excellent resource for sharing your knowledge with the world, so you decided to write your own article. Before you do so, there are a few things you should know. According to the Web site, "Wikipedia content is intended to be factual, notable, verifiable with external sources, and neutrally presented, with external sources cited." Therefore, you'll want to check the following links ahead of time to make sure your article meets the guidelines set forth by Wikipedia.

What Wikipedia is not:
en.wikipedia.org/wiki/Wikipedia:What_Wikipedia_is_not

Neutral point-of-view: en.wikipedia.org/wiki/Wikipedia:Neutral_point_of_view

No original research: en.wikipedia.org/wiki/Wikipedia:No_original_research

Verifiability: en.wikipedia.org/wiki/Wikipedia:Verifiability

Citing sources: en.wikipedia.org/wiki/Wikipedia:Citing_sources

Wikinews. You guessed it; this particular Wiki project is devoted to the news. Use Wikinews as a stopping point for learning about what's happening in the world around you. If you see an article covering an event you experienced, you may even want to chime in with your own interesting details.

Wikiquote. Looking for that perfect Shakespeare quote to kick off your presentation? Look no further than Wikiquote, a compendium of quotes from famous people, as well as creative works. (We love movies and couldn't help but look up quotes from "Napoleon Dynamite.")

Wikimedia Commons. If you enjoy pictures, sound, and video as much as we do, you'll want to check out Wikimedia Commons, a repository for multimedia files.

Wikisource. Here you'll find the Wiki equivalent of an online library, which contains source texts of every kind. Keep in mind that what you'll find at Wikisource is material that has already been published and not intended to be changed, so you won't be able to amend entries the same way you would Wikipedia articles.

Meta-Wiki. This is an interesting Web site devoted to information about the Wikimedia Foundation's many projects. You'll find listings for current and proposed projects, as well as information about the foundation itself, such as Board of Trustees meetings.

Wiktionary. Yep, you guessed it: This is the dictionary equivalent of Wikipedia. Here you'll find an open-source dictionary that you can edit the same way you would a Wikipedia article. As of press time, Wiktionary contained more than 123,600 entries featuring definitions, pronunciations, synonyms, antonyms, acronyms, translations, and a whole lot more.

Wikispecies. Now this is an interesting one. If you're an enthusiast of all things living, you'll want to check out Wikispecies. This "free directory of life" includes entries for pretty much every living creature its writers can think of including lions and single-cell organisms.

Wikibooks. Are you looking to quench your thirst for knowledge? Visit Wikibooks, a collection of open-source textbooks and other nonfiction material. Here you can read and contribute to the creation of online material discussing everything under the sun. (We particularly enjoyed the Wikibook "Muggles' Guide To Harry Potter.")

Click the Edit This Page link at the top of any entry to change the article as you see fit.

At Wikispecies, you'll find a compendium of information on pretty much everything that lives and breathes.

Start Exploring

Obviously, Wikipedia and its sister projects provide an excellent tool for learning more about pretty much anything. Even better, they're constantly updated with more current, factual information. Best of all, they're totally free. So search Wikipedia to your heart's content, and if you get a chance, click the Donations link on the Wikipedia Main Page to do your part to keep this valuable learning tool up and running.

by Nate Hoppe

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Enjoy TiVo While Traveling

Take Your Favorite Shows On The Road

TiVo's TiVoToGo feature enables you to use TiVo Desktop 2.2 to transfer TiVo recordings from your TiVo Series2 DVR (digital video recorder) to your laptop via your home network for playback later on that PC. The TiVo recordings transfer directly to your PC's hard drive, meaning you don't have to carry around any extra DVDs or other media. Now you can take your favorite episodes of "Lost," "Desperate Housewives," or "Stargate SG1" on the road with you.

In this article, we'll walk you through getting your TiVo Series2 DVR and PC set up to take your favorite TV shows along on your next trip.

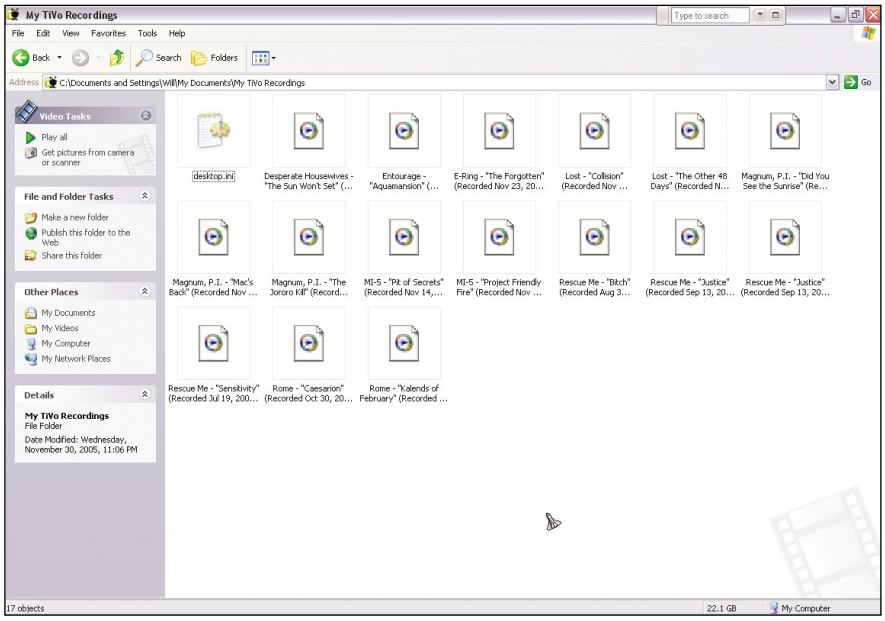
TiVoToGo Requirements

TiVoToGo requires that you have a TiVo Series2 DVR running version 7.1 of the TiVo software. The TiVoToGo feature doesn't work on Series 1 TiVo DVRs or the DirecTV DVR with TiVo. Your PC must be running Microsoft Windows 2000/XP with at least a 233MHz processor and 128MB of RAM. Microsoft DirectX 9.0 is a requirement for video playback. The TiVoToGo features don't currently support the Mac OS or older Windows versions. Although the TiVo Desktop software requires only 25MB of free disk space, each one-hour TV show you transfer from your TiVo box to your PC is going to consume 1GB to 2GB of hard drive space.

Set Up Your TiVo

Your TiVo Series2 DVR must reside on your home network, either by a wireless connection or by Ethernet. If you're still pulling down TiVo updates from your telephone, you need to purchase a wireless or Ethernet network adapter. It's important to note that purchasing a network adapter for your TiVo Series2 DVR means following the compatibility chart (customersupport.tivo.com/knowbase/root/public/tv2006.htm?) closely. If you don't choose to purchase a network adapter from the TiVo Accessories store (www.tivo.com/2.7.1.asp), follow the specification for the network adapters to the letter, including the serial number, or you may find yourself returning the network adapter to your point of purchase. Ask the salesperson if the network adapter is TiVo-compatible. With Netgear adapters check the serial number on the compatibility chart.

Upon plugging in a TiVo-compatible wireless adapter into a USB port, your TiVo setup will walk you through a routine to get your TiVo Series2 DVR online in your home network. If your network security relies on WEP (Wireless Encryption Protocol), you need to have your WEP code handy because TiVo's networking setup routine is going to ask



Installing TiVo Desktop 2.2 also creates the My TiVo Recordings folder, which is the default location for storing all your TiVo recordings.

you to enter the code in order to get your TiVo online. Currently, TiVo doesn't support WPA (Wi-Fi Protected Access), but as wireless network security standards evolve, it is a safe bet that TiVo's wireless standards will evolve to meet customer demands.

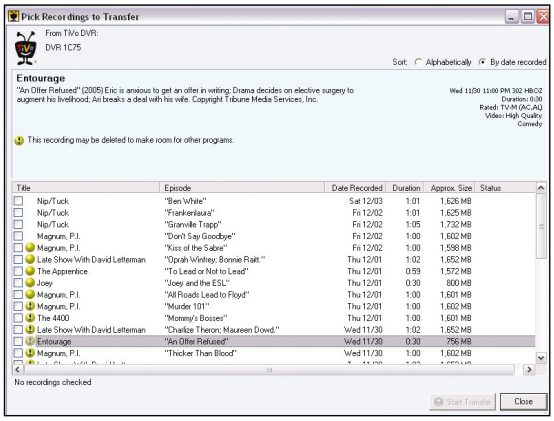
Set Up Your PC

You must first locate your TiVo MAK (media access key). The MAK provides security for TiVoToGo media transfers. Your TiVo account has its own unique 10-digit MAK.

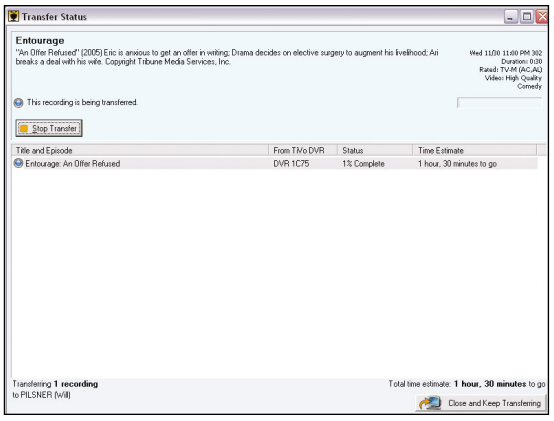
Go to your TiVo box and go to TiVo Central. From TiVo Central choose Messages & Settings to open the Messages & Settings menu on your TV screen. Next, choose Account & System Information to open the Account & System Information menu on your TV screen. Choose Media Access Key to view your Media Access Key. Your key comes with a TiVo licensing agreement restricting the number of devices to which you can transfer your TiVo recordings.

Your PC is also going to require a multimedia codec (compressor/decompressor) in order to play TiVo recordings properly through Microsoft Windows Media Player 10. You can find links to TiVo-compatible codecs at customersupport.tivo.com/knowbase/root/public/tv2176.htm. On average, a codec will cost you around $15. The TiVo-supported codecs have wizard-driven installation files.

To get your notebook PC setup to play TiVo content, you must download TiVo Desktop 2.2 from the TiVo Web site (www.tivo.com/desktop) and follow the installation wizard to install the client on your PC. After you finish installing TiVo Desktop 2.2, you'll find a new folder named My TiVo Recordings folder in your computer's My Documents folder. The My Documents\My TiVo Recordings is now the default directory for your transferred TiVo recordings. Both your notebook and TiVo Series2 DVR must reside on your home network in order to transfer TiVo recordings.



All shows saved on your TiVo Series2 DVR appear in the Pick Recordings To Transfer list with the same information as your TiVo's Now Playing List.



Click Transfer Status to monitor the progress of TiVo recording transfers to your PC.

Transfer TiVo Recordings To Your Laptop

Go to the WinXP Start menu and then choose Programs. From the Programs submenu, choose TiVo Desktop to open the TiVo Desktop Program group. Click TiVo Desktop to open TiVo Desktop 2.2. Click Recordings To Transfer to open the Pick Recordings To Transfer window. TiVo recordings saved on your TiVo Series2 DVR populate the window.

Before we continue describing the transfer process, here are some things to consider about transferring TiVo recordings to your PC hard drive. The transfer time of a one-hour television program may vary depending on network connectivity and latency. During the writing of this article, we found transfer times varying. As per the TiVo support site (www.tivo.com/support), the fastest recording transfer times are over a wired home network connection. The typical transfer time was upwards of one hour from a TiVo using a Netgear Wireless G network adapter over a typical home network. Additionally, transferring more than one TiVo recording at a time over a wireless home network connection is at the mercy of wireless network signal strength, network activity, recording quality, and interference from household devices like cordless phones and other devices like baby monitors. Go straight to the Wireless G adapters when choosing a wireless adapter for your TiVo.

Click Transfer Status to monitor to the progress of the TiVo recordings you are transferring to your PC. If you try to transfer TiVo recordings to multiple PCs at the same time, you can run into conflicts that can slow down the transfer process.

Watch TiVo Recordings On Your Laptop

Open TiVo Desktop 2.2 and select a TiVo recording you want to play back from your recordings list. Click Play to launch Windows Media Player 10 to play your selected TiVo recording. Your selected TiVo recording plays in Windows Media Player 10.

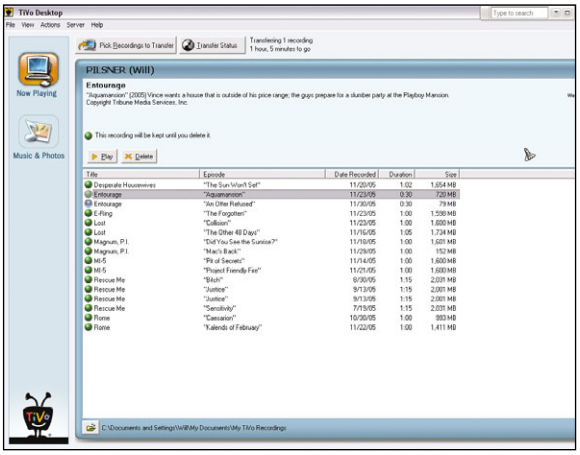
You can control the playback using Windows Media Player 10's controls. However, Windows Media Player 10's controls aren't as robust as your TiVo's remote control for fast forwarding through commercials

Manage TiVo Recordings On Your Laptop

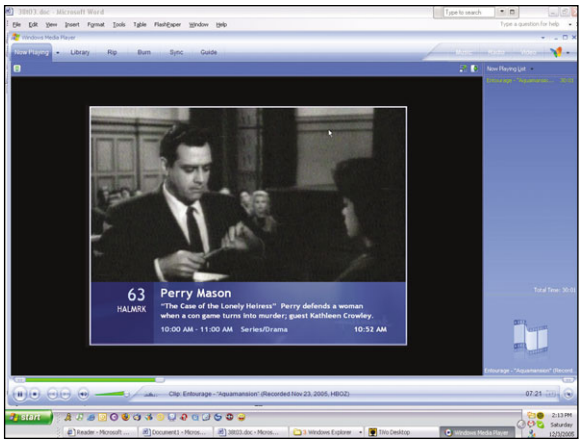
With typical TiVo recordings consuming about a gigabyte of hard drive space, it pays to keep an eye on the disk space your TiVo recordings consume. While today's laptop PCs come with 40GB or larger hard drive capacities right out of the box, transferring TiVo recordings of your favorite four or five

TV shows can consume a big chunk of your hard drive space that you may need for work-related data and tasks. You can delete a TiVo recording from your play list by selecting it and then pressing the DELETE key.

Click Delete Now to delete the selected TiVo recording from your PC's local hard drive. Alternatively, you can click Don't Delete to cancel the deletion and return to your TiVo Desktop 2.2 playlist.



The TiVo Desktop 2.2 user interface includes controls for managing the transfer and playback of TiVo recordings on your laptop PC.



Clicking Play on the TiVo Desktop launches your selected TiVo recording playing in Microsoft Windows Media Player 10.

Click Delete Now to delete the selected TiVo recording from your PC's hard drive.

Troubleshoot TiVoToGo Issues

During the course of transferring TiVo recordings to your laptop, there are issues that may arise. Networking issues probably top the list of problems you may encounter with your TiVo Series2 DVR. If your TiVo Series2 DVR can't connect to your home network, you should first check the network adapter and verify that it is TiVo-compatible and the wiring is not defective. If you are using a TiVo-compatible network adapter and you still don't have connectivity, go to your TiVo remote control and press the TiVo button to go to TiVo Central. Select Messages & Setting, Settings, and Phone & Network to open the Phone & Network menu to verify your TiVo DVR is indeed seeing your home network.

The MAC address should be on the top-right side of the Phone & Network Setup screen. If the MAC address doesn't appear on the screen, unplug your network adapter from the back of your TiVo box. Wait 30 seconds and then plug your network adapter back into your TiVo.

TiVo also recommends that you keep the firmware on your home network wired/wireless router up-to-date. Consult your router vendor's support Web site for firmware update information.

Your home network firewall can also complicate your TiVo's network connectivity. If you are using a firewall from Symantec, McAfee, or another vendor, you should verify that the following ports are open:

TCP Port 2190
UDP Port 2190
TCP Ports 8080-8089

You can find other networking troubleshooting tips on the TiVo support site under General Network Troubleshooting tips (customersupport.tivo.safeharbor.com/knowbase/root/public/tv2055.htm?)

You can't transfer TiVo recordings from your TiVo Series2 DVR to a PC if Parental Controls are configured on your TiVo. Turn off your Parental Controls prior to transferring recordings. The TiVo support Web site includes full documentation for working with Parental Controls (customersupport.tivo.safeharbor.com/knowbase/root/public/tv1529.htm?)

Take Your TiVo Recordings On The Road

Taking your TiVo recordings with you is another option to pass the time while on the road. For those with frazzled travel and work schedules, TiVo recordings are how they keep up with their favorite TV shows, and transferring them to a laptop PC can be a welcome taste of home for frequent travelers.

by Will Kelly

TiVo Recording & Other Mobile Devices

A few months ago, TiVo announced it was expanding the TiVoToGo service to support the latest generation iPod with video (Apple iPod 5G) and Sony PSPs (Playstation Portables). The significance of this action means TiVo is expanding its media format support beyond Microsoft media formats.

The charm of this new addition to the TiVoToGo service is that TiVo is taking out the need for third-party software or home-brewed hacks to transfer TiVo recordings to a portable device that works with non-Microsoft media. This new TiVoToGo feature promises to handle the direct transfer of TiVo recordings to these popular mobile devices.

Hardware Without The Plug!

When you're unplugged, pick up an issue of *CPU* and plug into the world of high-tech computing. Each month *CPU* brings you a functional mix of hardware reviews, information on modding, the latest and greatest software, and the opinions of some of the industry's leading columnists.

Pick up the latest issue of *CPU* on newsstands now!

www.computerpoweruser.com

International Traveler

Job-Hunting Overseas

Working overseas may sound terribly exciting, but the realities of finding work and getting settled abroad can be much less romantic. Restrictions on visas and other permits can hamper your job search, and the practicalities of such issues as securing housing, learning cultural mores, and keeping your finances in order can be discouraging.

Nevertheless, many people find great jobs abroad, and once they get there, they flourish. We collected an array of online resources that will help you succeed in your quest to become a globe-trotting professional.

A Worldly Outlook

Despite the advice of some experts to head overseas as a tourist and look around, your life will be much easier if you find a job before you leave the United States. Not only might the company take care of your work visa (or pay you from their U.S. office, possibly negating that concern), but they also might cover relocation expenses, give you a housing allowance, and more.

Internet resources for finding international jobs fall into two categories: job posting sites and job resource sites. The posting sites we'll mention here are not industry or region specific, but we will list a few sites tailored by region or industry.

International Job Listings

These are some of the larger sites offering actual job postings; some require a paid subscription. Jobs fall into a variety of occupations.

ForeignCareers.com (www.foreigncareers.com). This site takes an aggressive approach to your job search. ForeignCareers.com sifts through the job postings of more than 200 U.S. and global firms (many of which are humanitarian) on a daily basis and posts those openings on its site. There is no charge to view listings older than six weeks, and you can browse the listing companies' human resources sites for other postings. To view up-to-date listings, you need to become a subscriber to ForeignCareers.com; costs range from 83 cents to $1.25 per week depending on the length of your subscription.

International Career Employment Center (www.internationaljobs.org). Run by the nonprofit corporation, Carlyle, this site lists jobs that client firms around the world post. It's free to view the site's daily "hot jobs" listings (organized by industry), but to obtain contact information or view the complete database, you need to subscribe. Subscriptions cost between $3 and $5 per week depending on the length of your membership.

Monster Board (workabroad.monster.com). Monster.com has an international division, and it's here that you'll find its global job postings, as well as links to great articles on joining the international workforce. Browsing postings is free, and you need to register (which is also free) before you can apply for any jobs.

Planet Recruit (www.planetrecruit.com). The search engine of this UK-based placement firm is optimized for the UK, letting you search the country by region. (All other countries are lumped under Rest Of The World.) However, its database is fairly expansive. Each month, Planet Recruit lists nearly 30,000 jobs in dozens of countries. You can search without submitting a résumé, but registration is required to apply for a position.

TipTopJob (www.tiptopjob.com). Another UK-based site, TipTopJob lists postings around the globe and lets you search for them by industry sector, job title, or relevant skills. You'll have to register and submit your résumé before you can apply for a position, and doing so will place your résumé in the TipTopJob database.

Links To Links

In addition to these Web sites offering job postings, many online sites offer laundry lists of links, as well. These generally offer links to job boards, placement firms, and job search engines, and may also offer additional employment resources such as job descriptions (to help decide what to call yourself) and job-hunting advice.

Some helpful online resources with a global approach are The Riley Guide's International Job Opportunities page (www.rileyguide.com/internat.html), which is home to an array of links, and 4 International Careers &

Jobs (www.4icj.com), a free site with links to more than 2,200 employment Web sites, headhunters, job boards, and other resources in approximately 190 countries.

One Web site that makes it easy for users to narrow their focus by region or profession is Transitions Abroad (www.transitionsabroad.com). Click International Jobs on the left side and scroll down to the Guide To International Careers And Jobs heading. Transitions Abroad is also an excellent resource for tips on living abroad, expatriate Web sites, and other information. With links to nearly 900 job boards and 500 company career sites, another good resource for locating links in a particular region or category is Quintessential Careers (www.quintcareers.com/Global_job_resources.html).

Finally, if you're looking for work with a humanitarian agency, consider joining the Aid Workers Network (www.aidworkers.net). Membership is free and includes a weekly email bulletin and access to an extensive forum.

Planet Recruit looks like a UK-focused site, but it posts nearly 30,000 jobs from dozens of countries each month.

There are no accurate counts of how many U.S. citizens work abroad. (Not everyone registers with the U.S. State Department or their host country). However, there's no doubt the number is in the hundreds of thousands. It may take some time and effort, but with a little work, you can work abroad, too.

by Jennifer Farwell

Moving Overseas

Before you move (or for that matter, before you accept a job), you should research overseas living and explore the environment in which you will be living. Here are tips for making the transition as smooth as possible.

Compare costs. Overseas living isn't always inexpensive. To get an idea how much living will cost you, check out the U.S. State Department's per diem rates (www.state.gov/m/a/als/prdm). These list, in U.S. dollars, the maximum supplementary stipends allotted to service people and their families overseas.

Get tax help. Before you move abroad, investigate how the IRS will treat your income (the answers may surprise you) at www.irs.gov/taxtopics/tc850.html.

Don't cut all ties. Financial planners recommend you maintain financial ties with your bank in the United States, keeping at least one U.S. bank account open and maintaining some U.S.-based credit card accounts. Otherwise, your credit rating in the United States will take a nosedive, and you may encounter problems if you have to return home suddenly.

Ask your government. Check with the U.S. State Department (visit travel.state.gov) for any health alerts or other warnings relating to your destination. At this Web site, you can also review passport information and document requirements for the country to which you will be moving.

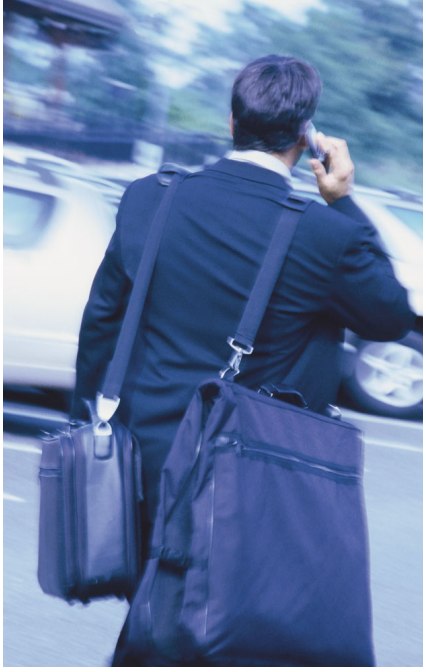
Background check. Before you leave for your destination, familiarize yourself with the country to which you will be moving. The U.S. State Department offers Background Notes for more than 100 countries at www.state.gov/r/pa/ei/bgn.

Relocate with care. The company that hires you may provide a relocation expert. Relocation specialists handle such sticky details as moving, leases, and having your utilities connected. If not, you need to coordinate the effort yourself; check with the American embassy of your new host country for help with such legal pitfalls as leases and home inspections.

Move with confidence. It's important to locate a reputable international mover that can handle customs issues and ensure your household goods arrive intact. Well-known firms include Allied (us.allied.com), Atlas International (www.atlasintl.com), and Graebel (www.graebel.com). Find other moving companies, plus a wealth of relocation assistance, at Escape Artist (www.escapeartist.com).

Get ready. Prepare yourself for the move by updating your home inventory, obtaining an international driver's license, changing your insurance policy if necessary, and performing other important tasks. For a good international relocation checklist, visit the Helpiammoving.com Web site (www.helpiammoving.com/moving_overseas).

Think of Fido. Check the animal importation/quarantine regulations of a new country before you decide to relocate with your pets. If you take them with you, a pet-moving company such as Air Animal (www.airanimal.com) will be invaluable.



One For The Road

business travel accessories

Compiled by Linda Bird

Some people are born to travel. With mobility in their genes, these road warriors can go for days foraging single-serving bags of honey roasted peanuts and hotel room French roast coffee. Others are not as blessed. If you prefer the comfort of your corner office to the comfort of a Comfort Inn, these handy accessories might make your next business trip a little more bearable.

Perfect Solutions Digital Map Distance Finder

You probably didn't appreciate the practical application for learning all those distance-and-speed problems in your math and physics classes—at least not until you had to calculate the travel time to your next business meeting in a distant city.

Enter the Digital Map Distance Finder. This handy gadget can quickly calculate the number of miles and travel time to your next destination, using a traditional paper map as a guide. Using the Map Distance Finder is easy, too. First, enter your map's scale and your travel speed into the Map Distance Finder and then roll the built-in tracker wheel over the route on your map. The device uses this information to instantly calculate the number of miles and travel time to your destination.

The Map Distance Finder is compact easily fits into your glove compartment. It also includes a magnifying lens to help you read the fine print on small-scale maps. You can order the Digital Map Distance Finder from Surray Luggage (www.surrayluggage.com) or eTravelGear (www.etravelgear.com) for $18.

Proporta Magnetic Vehicle Docking System

The Proporta Magnetic Vehicle Docking System ($19.95; www.proporta.com) lets you mount a PDA, cell phone, smartphone, or MP3 player to the interior of your vehicle's windshield. Ideal for devices with GPS capability, the system makes it easy to see the mounted device and GPS information when you're traveling. Installation requires no tools; instead, it uses a lever-activated suction mount to secure the holder to your vehicle's windshield. A safe adhesive magnetic pad attaches to your device or its case. As an alternative, Proporta offers case that include a mount for the docking system.

VIOlight Travel Toothbrush Sanitizer

It's tough to think about all the germs that might actually live on your toothbrush. And even if you replace your toothbrush with a new one every three to four months (just like your dentist recommends), there can still be potentially millions of bacteria lurking on your toothbrush in between the times you brush your teeth. And the situation is even worse when you pop your toothbrush into one of those plastic travel toothbrush holders because it provides a perfect place for germs to reproduce.

However, you can protect your health—at home as well as on the road—by using the VIOlight Travel Toothbrush Sanitizer ($29.95; www.violight.com). This innovative product incorporates an ultraviolet light into a travel toothbrush holder. According to the manufacturer, the UV light zaps 99.9% of the bacteria on your toothbrush in a mere seven minutes.

Two AA batteries power the VIOlight Travel Toothbrush Sanitizer. Rinse your toothbrush and then put it inside the holder with the bristles facing the light bulb. Snap the lid shut, and the unit begins sanitizing your toothbrush. When the process is finished, the unit turns off automatically.

Lewis N. Clark Map Light

If you've ever tried to decipher a map by the light of the silvery moon, you'll appreciate how the Lewis N. Clark Map Light ($11; www.lewisnclark.com) can help you read the fine print. This simple-but-handy device plugs into your car's standard 12V DC cigarette lighter. You can then use the built-in on/off switch to operate the light and read your map. To extend the life of the light, both the bulb and fuse are replaceable.

Surray Luggage Car Emergency Kit

Like insurance, a car emergency kit is one thing that you hope you never have to use. However, if you're ever in a situation when you need emergency supplies on the road, you'll be glad that you had the foresight to put them in your car.

As such, a well-designed car emergency kit like the one available at Surray Luggage ($49.95; www.surrayluggage.com), is a good value. The kit includes basics such as jumper cables, a flashlight, pressure gauge, and simple tools. To keep everything organized, the contents are neatly packaged into a bag.

Oregon Scientific Atomic Travel Clock

If you don't want to worry about resetting a travel alarm clock for the different U.S. time zones but want to make sure that the clock is 100% accurate, consider the Oregon Scientific Atomic Travel Clock ($19.95; www.oregonscientificstore.com). This novel clock includes a built-in radio receiver, which automatically activates six times a day to receive time signals from the U.S. Atomic Clock. Besides synchronizing the time, date, and day with the U.S. Atomic Clock, this travel clock adjusts for Daylight Savings Time and Leap Years.

Although it isn't laden down with bells and whistles, the Oregon Scientific Atomic clock does include some features you'll probably appreciate while on the road. You can set the alarm with or without a snooze feature, and the backlight feature helps you determine the time at a glance even in the middle of the night.

The design is also no-nonsense. At less than 4 inches in height, the clock is compact and lightweight for traveling. The stand doubles as a flip cover to protect the clock when it's not in use.

Tell us about an accessory that you use to make your life easier or more enjoyable on the road. Write to us at ontheroad@pctoday.com

Scot's Take

Best Security Software & Tips

Scot Finnie is editor of TechWeb's Pipelines sites (www.techwebpipelines.com) and author of ScotsNewsletter.com. He has served as managing editor for Windows Magazine *and editor for several other computing publications. Catch up with Scot at his newsletter Web site (www.scotsnewsletter.com) or send him feedback at* ***scot@pctoday.com***

A year ago I devoted a column to common-sense precautions for avoiding victimization due to phishing scams and spyware. Months later, someone pilfered my credit card from an online site at which I made a purchase and used the card for a brief shopping spree. The bank caught on to what was happening early, as did I, so the incident wound up being just an annoyance and not something that truly hurt me. But if you're still telling yourself, "it can't happen to me," you're precisely the victim the bad guys are looking for.

The last 12 months have also seen momentous changes among the companies that provide desktop security. Many smaller companies were snapped up by larger ones, which means that we now have fewer choices. Computer Associates, McAfee, Microsoft, Symantec, Trend Micro, and Zone Labs have bought companies. Some of the purchased companies over the past couple of years include GeCAD, Giant Software, InterMute, PestPatrol, PowerQuest, Sybari, Sygate, Tiny Personal Firewall, Veritas, and Zone Labs. In several cases the products no longer exist, or they've been buried within other programs. Or they're now only available by subscription.

Microsoft is entering the consumer fray in a major way with a subscription-based antivirus and firewall called Windows OneCare (www.windowsonecare.com; expected to debut in June) and a free downloadable antispyware program called Windows Defender (www.microsoft.com/athome/security/spyware/software/default.mspx), which reportedly will tie in to OneCare. Windows Defender (previously called Microsoft AntiSpyware) recently entered what Microsoft calls Beta 2 Preview and is publicly available for testing. Not to be outdone, Symantec has announced a consumer subscription service codenamed Genesis.

Brave New World

In December I wrote in my newsletter that I was giving up on Symantec security software, including Norton AntiVirus, a product I used for a decade. It's not that Norton AntiVirus did a bad job protecting against viruses; it's that it didn't do a good job with spyware, which was something Symantec claimed Norton AntiVirus 2005 AntiSpyware Edition would do. Moreover, the deterioration of the user experience for the larger Norton packages was continuing unchecked. And Symantec's tech support situation is out of hand. For the past several years, Symantec focused on enterprise security, and it shows.

I am currently using BitDefender's antivirus product after trying and discarding Panda and trying and liking Alwil Software's Avast! Antivirus. Both BitDefender and Avast! do a good job with a minimum of fuss and no errant product-activation notices—something Symantec can't claim.

What does all this mean? Despite the accelerated maturation of the security software marketplace, there continues to be several options in the antivirus category. In addition to BitDefender there is Eset Nod32, F-Secure Anti-Virus, Grisoft AVG, Kaspersky Lab Anti-Virus, and McAfee VirusScan. I'm less a fan of several of Trend Micro's PC-cillin, Computer Associates' eTrust EZ Antivirus, and Panda Software's Platinum and Titanium products.

The desktop firewall world is unfortunately much easier to wade through because there are fewer options available to consumers. Symantec discontinued Sygate Personal Firewall Pro in November 2005. Computer Associates bought Tiny Personal Firewall; at press time the product hasn't seen updates for a year. Sunbelt Software recently purchased Kerio Personal Firewall. (This product will surely

continue.) Symantec still sells Norton Personal Firewall, but usually as part of its bloatware Norton Internet Security package. I don't advise getting Norton Internet Security, instead go with Norton Personal Firewall because it's a good option for people who don't have much experience with firewalls. For anyone with more experience using firewalls, Zone Labs Zone Alarm is the better choice.

Antispyware Carousel

The antispyware category is experiencing upheaval. Nearly every major and most smaller desktop security software makers have some sort of antispyware defense available. My personal favorites are Microsoft AntiSpyware/Windows Defender and Webroot Software's Spy Sweeper. Sunbelt Software CounterSpy is also a good product. Lavasoft Ad-Aware, Computer Associates eTrust PestPatrol, and Safer Networking Spybot Search & Destroy are also good but somewhat less effective products.

Microsoft's Windows Defender has the best real-time antispyware protection; it's fast, and it stays out of your way. Microsoft has consciously decided not to bug you for every browser cookie or minor adware "threat." Why isn't that bad? Because you won't become so annoyed with it in operation that you'll be tempted to turn it off. I run Windows Defender or its predecessor, Microsoft AntiSpyware, on all the machines I manage, and I have the real-time protection turned on and automatic deep-scanning set to run every day.

By the same token, I wouldn't be without Webroot's Spy Sweeper. I like its real-time protection and user interface less, but it does a much better job than most at detecting and eliminating spyware that's already made it onto your PC. Microsoft has improved the detection and elimination capabilities of Windows Defender with a new spyware engine, which I haven't yet fully tested as of this writing, so perhaps it'll give Spy Sweeper a run for its money.

Fighting Spyware In The Real World

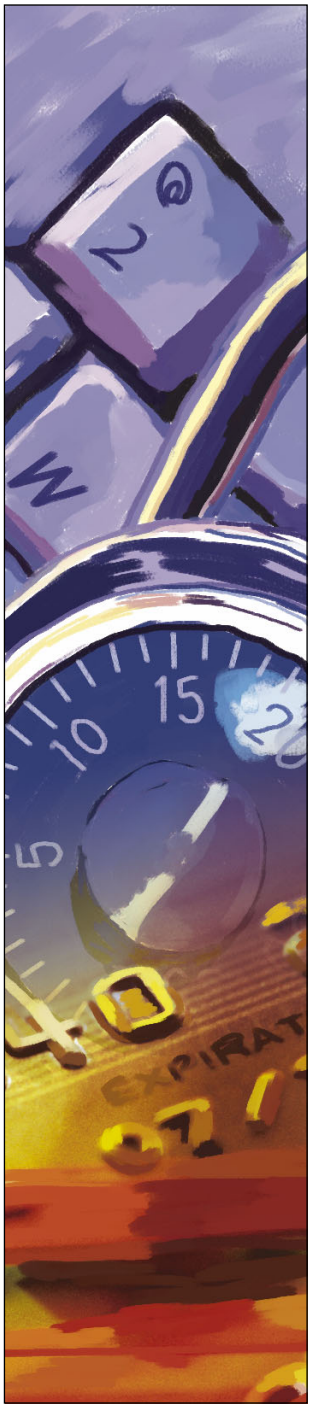
A relative sent me her notebook a few months back. It took me three days to eliminate all the spyware and adware that riddled her system.

The process of eliminating more than two dozen serious spyware programs and scores of mostly minor adware instances reinforced something that I've strongly advised in the past: There's no one antispyware program you can trust to get that job done by itself. You have to team up several products. My antispyware software toolkit consists of Microsoft AntiSpyware/Windows Defender, Spy Sweeper, CounterSpy, Ad-Aware, and Spybot. It's best to start by backing up your data and checking for obvious spyware products in Add Or Remove Programs. Next install your full suite of antispyware tools and run all their scans, one after the other, vanquishing all suspicious hits. Restart your computer after each set of scans and rescan your computer again until you get a clean sweep of all the utilities.

On some PCs the problem is worse. Experienced users will find that information their antispyware programs provide may help them dig into Windows' System Registry to root out recurring spyware infections. In the worst-case scenario, you may have to wipe your PC's hard drive. But consider an independent computer repair professional before resorting to that solution.

If you find yourself gripped in the throes of a spyware outbreak, this Small Business Pipeline article (www.smallbizpipeline.com/175802146) by my friend and colleague David Methvin, a *PC Today* columnist and chief technical officer of PC Pitstop, does an excellent job guiding you through dealing with the problem.

by Scot Finnie



Microsoft Office Tips & Tweaks

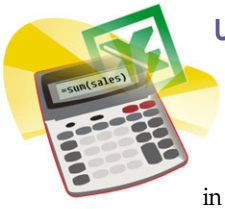
Meetings, business trips, phone calls, and paperwork can make your time disappear like ice cream on a sweltering summer day. But you can put some sanity back into your life by using your software more efficiently. It only takes a few moments to learn new features in the programs—an investment that can pay you back in hours of free time. Let's look at a few of these tips and tricks.

by Linda Bird

Create Range Names (Excel)

Face it. The cell references used in Excel to designate ranges are pretty hard to remember. Wouldn't it be nice if you could instead assign descriptive words or phrases (such as "Salary" or "Sales") to Excel ranges? Fortunately, you can. In fact, once you've assigned a "range name" to a group of cells, you can use the range name in various ways, such as using it in formulas. For example, you could set up the SUM function as =SUM(Salary) instead of =SUM(B5:B27).

To assign a range name, first select the cells for which you want to designate a name. With the cells selected, choose Insert, Name, and then Define. Type a name for the range in the text box. As you do so, keep in mind that you're limited to 15 characters and that you must use underscores in place of spaces. After you enter the name, click Add and click OK.



Use Range Names In Functions (Excel)

Once you've created a range name in Excel, you can use it in functions and formulas. This is helpful because it translates Excel's cell references into plain English. For example, instead of using a cryptic-sounding function such as =SUM(A2:E443), you can create a range name called "Sales" for cells A2:E443 and then use the function =SUM(Sales). In the same way, you could substitute the range name for a cell reference in the AVERAGE, MIN, MAX, and COUNT functions

Cut PowerPoint Files Down To Size

If your PowerPoint files seem to grow . . . and grow . . . and grow, try cutting them down to size. One way to trim the fat is by adding a blank slide (with the default design template) before the first presentation slide. Contrary to logic, this actually *reduces* file size. Why? Because the blank slide is used as the preview image that PowerPoint uses when you select a file in the Open dialog box. Because the preview image for a blank slide is well, blank, the file size is actually smaller. Try it.

Document Your Thoughts (PowerPoint)

You can add your comments to any slide in a PowerPoint presentation. This is a helpful feature to use when you're collaborating on a presentation. For example, you can add your comments to a presentation and then email it to another member of your team who adds his or her thoughts, and so on.

To add a comment to a presentation, display the slide where you want the comment to appear. Additionally, if you want the comment specifically associated with a slide element, such as an object or placeholder, first select the element. Next, choose Insert and then Comment. A yellow comment box with your name and the date will appear. Type your message in the box and then click outside of it. The comment box automatically closes, but a comment icon indicates your message's location.

Of course, you can redisplay the comment box any time that you want to view or make changes to the message. To do this, double-click the icon. Alternately, you can right-click the comment and then choose Edit Comment from the shortcut menu.

Finally, if you want to remove a comment from your slide, right-click the comment icon and then choose Delete Comment from the shortcut menu.

Locate Comments, Blank Cells & More (Excel)

Even though the Go To command is useful in its simplest form—locating cells by reference or range name—don't limit yourself to using it in only that manner. Instead, you can use Go To for finding a wide variety of cell entries. For example, you can quickly find all blank cells, constants, or comments in a selected range.

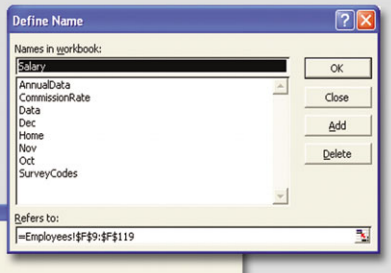
To tap into the advanced Go To options, first select a range. Press F5 to display the Go To dialog box. Click the Special button to display the Go To Special dialog box. Click the option button that indicates the type of cell entry (such as Constants, Objects, or Comments) you want to locate. When you click OK, Excel will highlight cells with the indicated type of entry.

Take A Different View (Word)

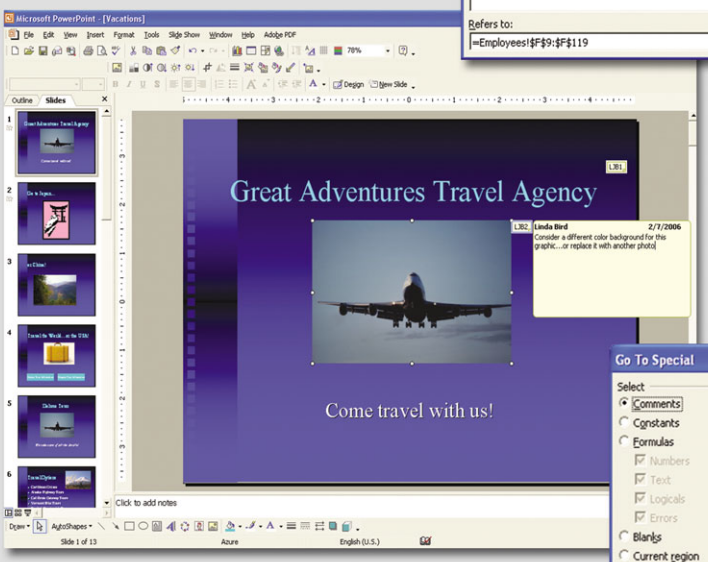
Word offers a number of methods for viewing documents. While the two most-used views are Normal and Print Layout (accessed via the View menu), you can also tap into other viewing options. As you do so, keep in mind that changing the view doesn't affect how your document prints—just how it appears on your monitor.

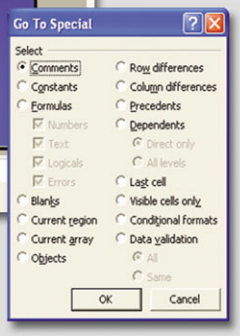
For example, if you're tired of devoting screen real estate to toolbars, the status bar, and other screen elements, you can quickly suppress their display. This gives you more viewing space for your document. To do this, choose View and then Full Screen. To redisplay your toolbars, click the Close Full Screen button. Alternately, press ESC to redisplay your screen in either the Normal or Print Layout view.

You can assign plain-English names to Excel's ranges and then use the range name in formulas as needed.



You can easily collaborate on a PowerPoint presentation by adding comments.





You can use the options in the Go To Special dialog box to quickly locate specific types of cell entries throughout your entire worksheet.

Get There Quickly (Excel)

You can move quickly to any one of the almost 17 million cells in an Excel worksheet by using the program's Go To feature. To do this, press F5 or click Edit and then Go To to display the Go To dialog box. Enter a cell reference in the Reference text box and then click OK.

Furthermore, if your worksheet contains range names, you can use the Go To command to quickly locate and select the associated cells. The worksheet's range names are automatically listed in the Go To dialog box; just double-click a range name on the list to select the associated cells.

Use Zoom (Word)

You can also change the Zoom settings for your Word document. As the feature's name indicates, Zoom lets you magnify (or shrink) your display. The quickest way to use this feature is to choose a setting on the Zoom button's drop-down list. For example, you can display the document using preset percentages or by page width. You'll also notice that the available options change, depending on whether you're using Normal or Print Layout views. If you want to enter a very specific percentage, such as 131%, you can click the Zoom box, type the percentage, and then press ENTER.

Microsoft Excel 2003

Sharing Workbooks & Tracking User Changes

Shared workbooks are common in Excel, especially in the workplace. For example, a project status report may need input from people involved in different areas of the project. Even if the workbook is saved on a shared drive, it is inaccessible to more than one person at once; additional users who try to open files already in use will receive a message indicating that the workbook is locked for editing. This message tells you who is currently using the workbook and lets you view a read-only copy or request to be notified when the file is available—all nice features, but not as nice as being able to use it when you need it.

Share Workbook Settings

The Share Workbook option allows multiple users to access a workbook simultaneously. Select Tools and then Share Workbook to open the Share Workbook dialog box.

The simplest share settings are on the Editing tab. Check the Allow Changes By More Than One User At The Same Time. This Also Allows Workbook Merging box to allow multiple users to make changes at the same time. You can also view a list of current users (and boot them off by selecting their names and clicking Remove User). Click OK after checking the box; your workbook is now shared.

The Advanced tab in the Share Workbook dialog box has more detailed options. In the Track Changes section, choose the number of days to keep the change history in your document. In the Update Changes section, choose to update a user's changes whenever the file is manually saved by a user or automatically at specific time intervals.

Of course, one user could make a change that conflicts with another user's change. In the Conflicting Changes Between Users section of the Advanced tab, you can select from two options: 1) the system will ask you specifically which change should win out or 2) whichever change is being currently saved automatically wins out. At the bottom of this tab, you can choose whether to include your print and filter settings in your personal view. By default, these boxes are checked, and your settings will appear. If you want to view the settings made by the document's original author, uncheck these boxes.

Once your workbook is available to everyone who needs it, the obvious dilemma is how to track the changes made by multiple users. You have a few options.

Track Changes

Change tracking is available in detail through the Highlight Changes dialog box. To open this box, select Tools, Track Changes, and then Highlight Changes. To track users' changes while editing, check the Track Changes While Editing. This Also Shares Your Workbook box at the top. A nonshared workbook cannot use the track changes function.

From the drop-down menus in the middle of the dialog box, select which changes you would like to highlight. You can choose in terms of when changes were made, who made them, and where they appear in the document. For the timing of changes, choose from Since I Last Saved, All, Not Yet Reviewed, and Since Date (you enter a specific date). For ownership of changes, choose from Everyone, Everyone But Me, or Each Individual User (all users who made changes reflected in the change history are listed). For location of changes, click the red arrow button next to the Where text box and select the cells you want to examine. For example, if you were only interested in the changes made to a single column of customer addresses, you could choose to highlight changes only in that column. To highlight all changes in a workbook, uncheck the boxes in front of When, Who, and Where.

In the bottom section of this box, choose the manner in which to view changes. You can check the box for Highlight Changes On Screen or List Changes On A New Sheet. If you choose the former, Excel will outline cells that contain changes. These outlines are color-coded by user, and holding your mouse over any highlighted cell will display the details of the change (user and change made). If you choose List Changes On A New Sheet, Excel creates a History worksheet that contains all users' changes in list form. This sheet includes more information about the changes, including user, time and location of change, the replaced or deleted data, and how saving conflicts, if any, were resolved. Select your features and click OK.

Select Changes To Accept Or Reject dialog box. To open this dialog box, select Tools, Track Changes, and then Accept Or Reject Changes. Much as the Highlight Changes dialog box lets you

select which changes to highlight, this box lets you select which changes to accept or reject based on when the changes were made, who made them, or where they appear in the document. After you have made your selections, click OK. The Accept Or Reject Changes box will open.

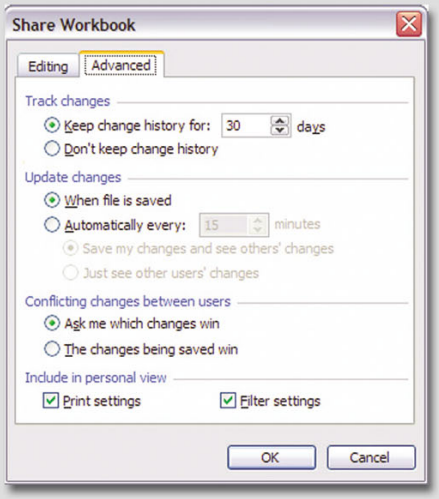
Accept Or Reject Changes. The changes will appear in this box one at a time. Each change is described by user name, the date and time the change was made, and the nature of the change. The changed cells are highlighted in your spreadsheet to indicate where a change was made. At each change select from the buttons across the bottom to accept or reject (or to accept/reject multiple changes at once): Accept, Reject, Accept All, Reject All, or Close. Accepting a change makes the change permanent in your document; rejecting it restores that portion of your document to its original condition.

Compare & Merge

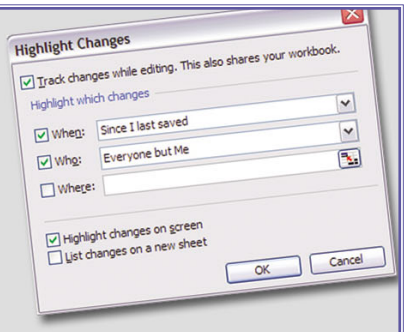
If you need input from someone not on your network, you could email them the file and have them make changes, save, and send the file back to you. You then need to compare the document returned to you with the one on your network to update your file with the remote user's changes. No, you don't have to scroll through line by line. Excel offers Compare And Merge for this purpose.

To merge files, first save the returned file (from your remote user) with a different filename but in the same folder as the original file. Then open the original file (the one in which you want the changes to show up). Select Tools and then Compare And Merge Workbooks. If Excel prompts you to save the original document, click OK to continue.

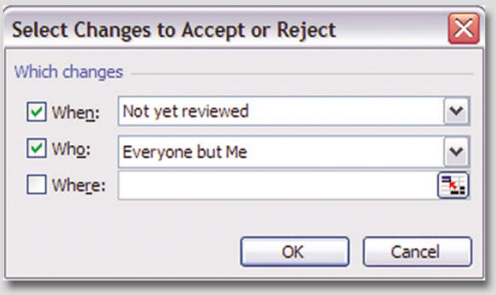
The Select Files to Merge into Current Workbook dialog box now opens. Browse for the returned file and click OK. The changes from the returned file will merge into the original file. Next, select Tools, Track Changes, and Highlight Changes. This opens the Highlight Changes box. In order to view the changes made by the merge, check the box in front of When and select Not Yet Reviewed. This highlights all new changes to the document, which you can then accept or reject one by one as described above. If you have multiple remote users, you can use this process to merge each document with your original file as you receive them.



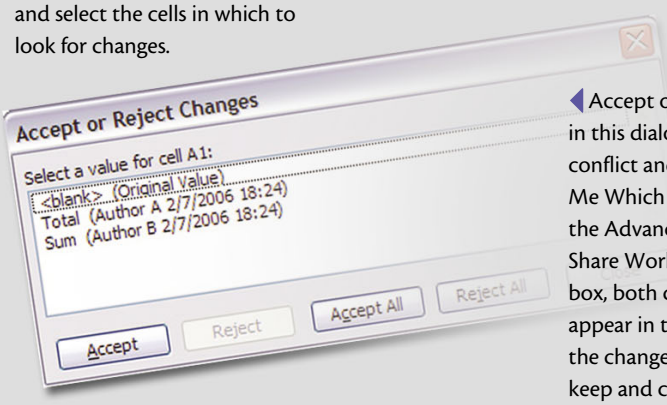
When you set the number of days to keep the change history, consider how many days it will take for your remote user to receive and edit the file and for you to receive and review the file.



If you highlight changes on screen, each changed cell will be marked with a triangle in the corner. This is an excellent option if you anticipate only limited changes or need to see an overview. Use the List Changes On A New Sheet option to add a new sheet with a complete list of all changes. This option can be useful if you anticipate many changes or need more details about each change.



If you are only reviewing a single worksheet or a small area of a worksheet, limit the changes to track by using the Where box. Click the button with the red arrow to go to your worksheet and select the cells in which to look for changes.



Accept or reject changes in this dialog box. If changes conflict and you chose Ask Me Which Changes Win on the Advanced tab of the Share Workbook dialog box, both changes will appear in this box. Highlight the change you want to keep and click Accept.

Learn To Share

Try it out! No more waiting until everyone else is done; no more asking each user which changes she made; no more scrolling through documents, trying to find differences. With shared workbooks in Microsoft Excel, handling multiple users in one workbook is a breeze. by Liz Stefaniak and Van T. Huett

Microsoft Word 2003

Spelling Options & Custom Dictionaries

If you're like most people, you consider Word's spell checker an essential part of the program. After all, there's nothing less professional-looking than a document that's peppered with misspelled words. However, if you're only using the basic, default settings for this feature, you're missing out.

In fact, Word includes a number of options that you can set to make spell checking match your work style—and help you become more productive in the process. Additionally, if you're working in an organization with industry-specific terms, you can increase your efficiency even more by creating a custom dictionary for those words. This prevents the spell checker from stopping needlessly on those words. In this article we'll get you up to speed with the multitude of ways that you can use the spell checker and help you develop custom dictionaries.

Default Settings

Before you start tweaking Word's options, it's good to know how the basic spell checking feature operates. In short, you have two main options: You can fix misspelled words as they occur or correct spelling errors all at once.

By default, the Check Spelling As You Type feature is turned on. This feature ensures that Word flags misspelled (or mistyped) words with a squiggly red underline as soon as you type them. You can right-click the word to see a list of correctly-spelled words and then click the option you want from the list.

However, instead of correcting errors on the fly, you can wait until you've created the entire document and then correct any misspellings all at once. By default, Word automatically checks both spelling and grammar, so it highlights any grammatical inconsistencies, as well. To start the spell checker, press F7 or choose Tools and then Spelling And Grammar. Word scans your document until it finds a word that doesn't match those in its dictionary. In the displayed Spelling And Grammar dialog box, choose the correct spelling from the Suggestions list and then click Change. If the word is actually spelled correctly but Word doesn't recognize it (such as someone's name), you can instead choose Ignore from the dialog box. When you're finished checking spelling and grammar, close the dialog box.

Additional Options

You can control many of the spell checker's settings so that the feature is tailored to your work style. To change these default settings, choose Tools and then Options to display the Options dialog box and then click the Spelling & Grammar tab.

You'll quickly notice that Word includes a long list of available settings; you can check the appropriate box to activate the feature; clear the box to turn it off. Let's look at the most important settings:

Check Spelling As You Type. You can check the box for this setting so that spelling and grammar problems are flagged automatically as you type. Word marks misspellings with a red, wavy underline; grammatical errors are shown with a green underline. The underline indicators are only shown on-screen so that you can identify the problems; they won't appear in print.

Suggest From The Main Dictionary Only. Word includes an internal (main) dictionary, against which it checks the words in your document. If you check the Suggest From The Main Dictionary Only, Word won't check possible errors against custom dictionaries on your system.

Ignore Words In UPPERCASE and Ignore Words With Numbers. These options are pretty self-explanatory. However, there are a number of cases where you would want to check the boxes for these options. For example, if you have a document with a list of part numbers, you would probably check the Ignore Words With Numbers option to prevent Word from flagging each and every part number as a misspelling.

Ignore Internet And File Addresses. You can turn on this option to make the program ignore common words such as URLs, file names, and email addresses.

Check Grammar With Spelling. By default, Word checks both spelling and grammar. You can clear this box if you prefer to check only the spelling of a document.

Show Readability Statistics. You can check this box to activate a handy option: Displaying the document's statistics, including the number of words, length of sentences, and at what grade level the document is written.

Create Custom Dictionaries

Any word you enter in a document is double-checked for spelling against those words in Word's main, built-in dictionary. However, you may have a number of words that are specific to your industry or company, such as

industry-specific terms or people's names. To stop Word from annoyingly (and consistently) marking these words as errors, you can create a custom dictionary.

First, choose Tools and then Options and click the Spelling & Grammar tab. On the Spelling & Grammar page, click the Custom Dictionaries button. In the Custom Dictionaries dialog box, click New. Assign a name for your dictionary in the Create Custom Dictionary dialog box and then click Save.

Now you're ready to add words to your dictionary. In the Custom Dictionaries dialog box, select your custom dictionary from the list and then click the Modify button. Type the word and then click Add. Repeat this process until you've added all the words you'd like to your custom dictionary. When you're finished, choose OK in the Custom Dictionaries and dialog box.

Finally, to make sure that *both* the main and custom dictionary are used, clear the box for the Suggest From The Main Dictionary Only option. Click OK to close the Options dialog box.

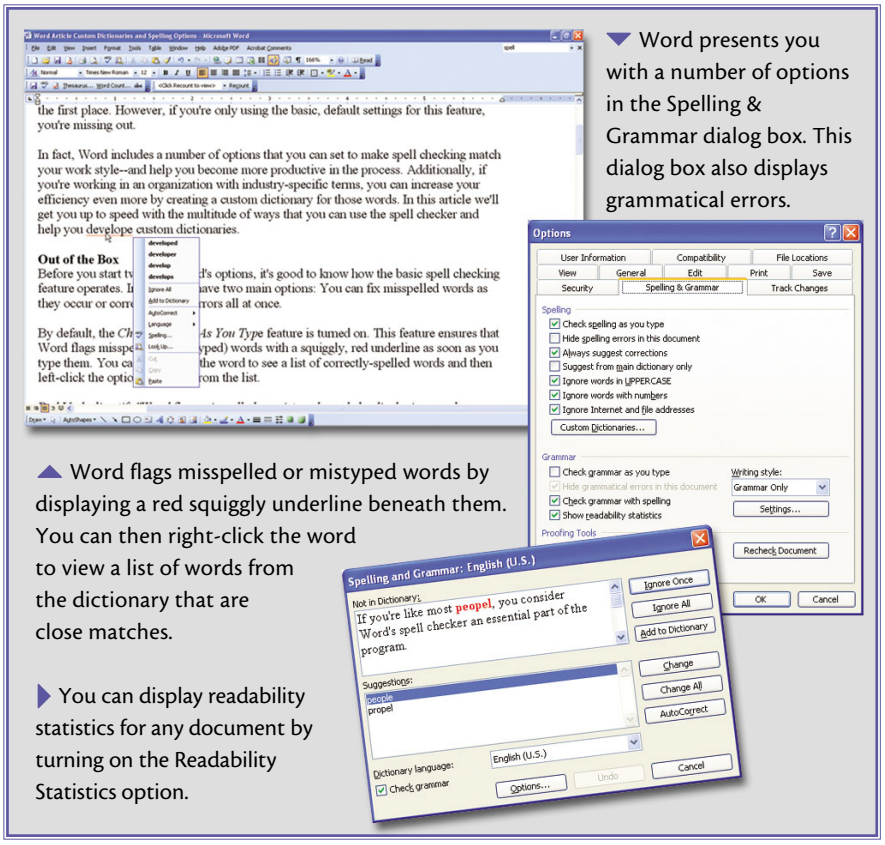
Making Changes

You can also add words to an existing custom dictionary. To do so, choose Tools and Options and then click the Spelling & Grammar tab. Click the Custom Dictionaries button to display the Custom Dictionaries dialog box and then select your custom dictionary from the list. Choose Modify and then add words using the same basic method that you utilized when you initially added words to your dictionary.

In similar fashion, you can remove words from the custom dictionary. To do so, select your custom dictionary, select a word from the list, and then click Delete and OK.

One final note: Even though Word's spell checker is a great tool, you should always still proof-read your documents. For example, if you type "from" instead of "form," Word won't flag it as a mistake. The lesson? Rely on Word's spell and grammar checking options, but don't expect them to function as a catch-all.

by Linda Bird



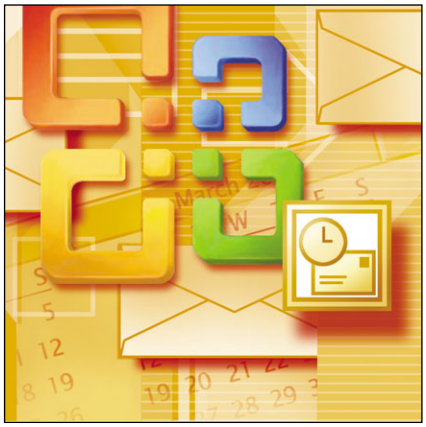
NEWGEAR

Project-A-Phone

No, it's not a medieval instrument of torture for your smartphone. Rather, it's the Project-a-Phone, made by the company of the same name ($199; www.projectaphone.com). If you give presentations and want a device that will project what's on the screen of just about any mobile device (or even multiple devices simultaneously), the Project-a-Phone is designed for the job.

Microsoft Outlook 2003

Optimize Your Data Store



As we mentioned in previous issues, Outlook stores all your folders (Inbox, Contacts, Calendar, and others) in a single data file: Outlook.pst. As the size of Outlook.pst increases, Outlook slows down noticeably. When it becomes truly monstrous (several gigabytes), it may consume so many system resources that it degrades overall system performance and could even become corrupted. Outlook's AutoArchive feature can extract old messages and move them to an archive file (Archive.pst). However, over time this file will also become unweildy and performance will degrade. A better solution is to split your messages among multiple data files. We'll show you how (and why it's sometimes necessary) to establish additional data files. We'll also give tips for organizing those files so your message flow continues unhampered.

Ask For Assistance

If you rarely clean out your messages, tasks, and other Outlook items, you'll be amazed at the performance advantage you gain after you create extra data (Personal Folders) files and offload some of this information to them. You can then have your backup program archive these other files. You decide where Outlook stores these Personal Folders files, such as a secondary hard drive or even a flash drive. (If you use a removable medium, it must be present in the system before you can store or view Outlook items on the device.)

To create a new Outlook data file, select Options from the Tools menu and click the Mail Setup tab. Next, click the Data Files button to open the Outlook Data Files properties display. Click the Add button, select Office Outlook Personal Folders File (.pst), and click OK. By default, Outlook will name the new file Personal Folders(1).pst and store it in the same location as your current Personal Folders file, but you can give it a more meaningful name (such as Old Office Items) and store it wherever you wish. After you name the file, change its description (under Name) to match the file name to make it easy to identify.

Establish The Rules

After you create a new Personal Folders file, it will appear in your Outlook Mail pane as a folder beneath your default Personal Folders list; you can click it at any time to view its contents. It will contain a Recycle Bin and a Search utility that you can use to delete or find messages, respectively. (This can be a bit confusing at first. All Personal Folders are individual files. However, Outlook displays them as if they were folders and treats them that way, letting you have subfolders within folders.)

If Outlook has been routing all your incoming messages into your inbox, (a folder in your Primary Folders file), you can establish rules that move or copy messages to your new Personal Folders file. If you previously created message subfolders and established rules to have Outlook divert messages there, you can edit those rules to point to the new file where you want your messages diverted. (If you don't make this change, Outlook will continue diverting messages to the old folder, or if you delete the folder, Outlook will turn off the rule.) Note that Rules And Alerts only works for messages. To move contacts, notes, and other items to a new Personal Folders file, skip to "Become An Archivist."

To establish settings for the new Personal Folders file, select Rules And Alerts from the Tools menu and establish the parameters of your rule. When Outlook prompts you to choose a destination for the messages, designate your new Personal Folders file.

Microsoft designed Rules And Alerts primarily to process incoming mail, but you can use it initially to move previously retrieved messages to your new Personal Folders file. To do so, click the folder from which you want to move the messages (it does not have to be the inbox) and open Rules And Alerts.

After you establish the parameters for your rule, select the Run This Rule Now On Messages Already In *"Folder Name"* checkbox, replacing *Folder Name* with the name of the folder you selected. Outlook will process that folder, identify messages that meet your criteria, and move them to the new data file.

Become An Archivist

You can use the AutoArchive feature to move messages, tasks, or calendar items to a secondary Personal Folders file. (You cannot move your main Contacts folder out of the primary Personal Folders file.) There's little point in archiving all your items to a secondary file because it's the same as letting Outlook archive them to an Archive.pst file. Instead, you can selectively archive items from various folders.

In the Mail, Calendar, or Tasks pane in Outlook, locate the folder or item whose

contents you wish to archive to a secondary Personal Folders file. Right-click the folder and select Properties. Click the Auto Archive tab and select the Archive This Folder Using These Settings radio button. Next, select the Move Old Items To radio button and click Browse. Navigate to the location of your new data file. In the Clean Out Items Older Than field, select the age items should reach before Outlook archives them.

If you do not have AutoArchive turned on, Outlook will warn you and enable the feature with a default setting of 14 days. (AutoArchive runs every two weeks.) To change these settings, select Options from the Tools menu and click the Other tab. Click AutoArchive to open the global AutoArchive dialog box.

The settings you apply to any folder will override the global AutoArchive settings, which will apply to all other folders for which you have not established special settings. You can instruct Auto-Archive to move multiple item types (tasks, calendar items, and messages) into a single Personal Folders file, effectively creating a job or client-specific backup. AutoArchive is the only way to move our main Tasks or Calendar folders to a secondary Personal Folders file.

Helpful Hints

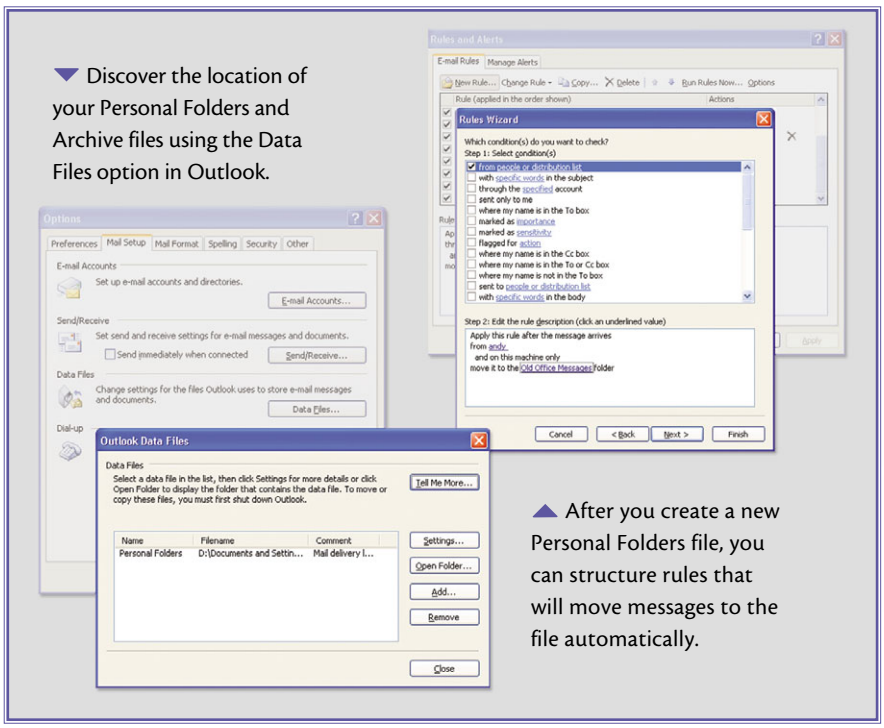
Using secondary Personal Folders files, Rules And Alerts, and AutoArchive, you should be able to effectively protect and archive the majority of your Outlook items. A few other tricks will give you even more control.

Compress it. When you remove items from a Personal Folders file, the file size does not decrease unless you compact the file. On the File menu, select Data File Management. Select the Personal Folders file you want to compact, click Settings, and click Compress Now.

Hide it. If you are using secondary Personal Folders files for archival purposes only, you can hide them from view so they won't clutter up your Outlook interface. Right-click the folder in the Mail pane and select Close "*Folder Name*," (where *Folder Name* is the name of the folder). To unhide it, click Personal Folder or any top-line folder (not a subfolder) and select Open Outlook Data File. Navigate to the location and select the folder.

Finally, Outlook has may other elements, including rules, stationary, and contacts, that you may want to export for backup purposes or to move them to another machine.

by Jennifer Farwell



▼ Discover the location of your Personal Folders and Archive files using the Data Files option in Outlook.

▲ After you create a new Personal Folders file, you can structure rules that will move messages to the file automatically.

NEWS*BRIEF*

Consumers: 3G Is No Big Deal

According to a recent In-Stat report, 3G bandwidth's "lack of perceived value" among consumers will continue to push down cellular data pricing and also negatively impact for-pay Wi-Fi service providers and aggregators. The report also found more than 18.9% of Wi-Fi users use Wi-Fi only at home, whereas more than 33% use only free Wi-Fi connections and two-thirds say they use commercial hot-spots. Notebooks are the primary tool for users with mobile data, used almost twice as often as mobile phones.

by Christian Perry

NEWS*BRIEF*

Cambridge Welcomes Wi-Fi

Cambridge, Mass., home of Harvard and MIT, has revealed plans to provide free city-wide Wi-Fi. But leave it to MIT to make this effort unique. According to The Tech, an MIT student newspaper, MIT is creating the Wi-Fi mesh using $15 commercial access points from Netgear. But instead of settling for the 40-milliwatt chip inside of each, MIT is replacing them with 400-milliwatt chips hacked with code (publicly available and written by MIT research group Roofnet) that enables the mesh technology. Officials expect the network to run at a maximum speed of 54Mbps, and (barring excessive traffic) should be freely available to Cambridge's 100,000 residents as early as late summer.

by Christian Perry

WiMAX Goes Mobile

The New 802.16e Is Ready To Roll

EDGE (Enhanced Data Rate For GSM Evolution), GSM (Global System for Mobile Communication), EVDO (Evolution Data Optimized), etc.: It takes a notebook to keep track of the acronyms for mobile technologies today, let alone to learn about the features each one offers. Add the new mobile WiMAX (Worldwide Interoperability For Microwave Access) specification, officially known as 802.16e, to the mix and the situation becomes even more bewildering.

So, what exactly is mobile WiMAX, and what does it mean for road warriors? Like so many technologies before it, mobile WiMAX is either the up-and-coming killer specification or the most over-hyped concept in technology today, depending on who's talking.

WiMAX To Go

WiMAX 802.16e is the mobile variant of a wireless, broadband communications technology that works over greater distances than fixed (receiver stays in one place) Wi-Fi and at faster speeds than the mobile broadband offered in some cell phones. With mobile WiMAX, users will enjoy peak data rates of up to 5Mbps (megabits per second) over distances of several miles. (Theoretically, WiMAX operates at 30Mbps over distances of up to 30 miles, but experts say real-world limitations make such transmissions unlikely). Compare this to 300 feet or less with most Wi-Fi and peak data rates of 2Mbps with cellular, and you begin to see what the excitement's all about.

With mobile WiMAX, proponents say, one would realize the speed of a stationary broadband connection with the mobility of a cell phone. The possibilities are tremendously exciting. Road warriors with notebooks or automobiles that are mobile WiMAX-enabled (either an embedded chip or an inserted card) could have roaming Internet access. Forget finding a hotspot or waiting until you get to your hotel to log on to the Internet. With mobile WiMAX, you'll be able to browse the Internet or retrieve email on a full-size screen while you are waiting for an oil change.

In the most ambitious scenarios, a user's notebook, cell phone, or handheld device could maintain a high-speed Internet connection continuously, even when driving down the street. As with current cell phones, the mobile WiMAX device would move from one transmission tower to the next, with little or no lapse in coverage as it passed through different areas.

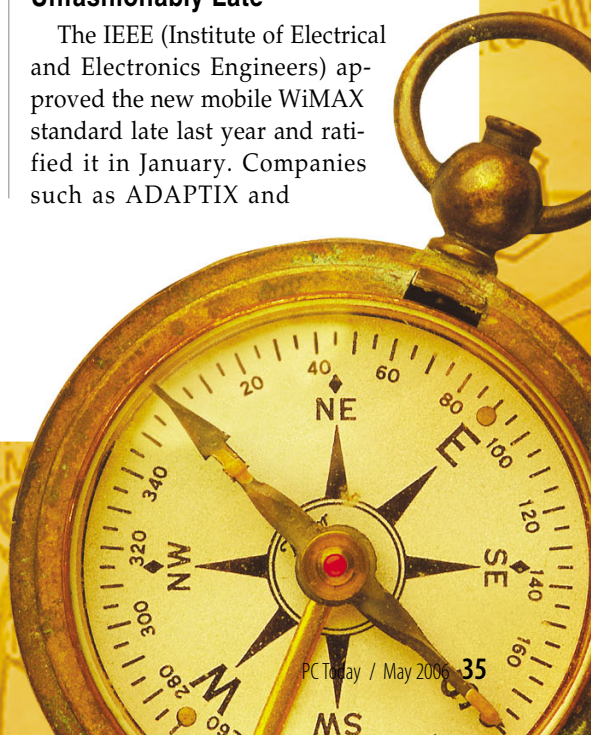
The uses for such technology are myriad. A salesman could keep his email up and running as he traveled around town, setting his device to issue audio alerts when a critical email came through. A group of executives could take part in a video conference as their limousine drove them from one meeting to the next. On a more personal level, a harried mobile worker could enjoy a favorite television broadcast (or suffer through a streaming corporate video) while sitting in the park on his lunch break.

Such depictions may sound too deeply integrated for some people, but hardcore technology enthusiasts are salivating at a future filled with mobile WiMAX. Furthermore, WiMAX is an open, yet certified, standard, meaning every piece of equipment approved for a particular WiMAX profile should work with every other. (Certified products have undergone third-party testing to ensure they interoperate with at least two others in the same profile.) Both PC manufacturers and cellular providers are interested in its potential. Does that mean mobile WiMAX will be coming soon to a phone store near you?

Unfashionably Late

The IEEE (Institute of Electrical and Electronics Engineers) approved the new mobile WiMAX standard late last year and ratified it in January. Companies such as ADAPTIX and

At a WiMAX Forum event last year, developer ADAPTIX tricked out a GMC Yukon Denali and demonstrated mobile WiMAX for VoIP (Voice over Internet Protocol) phone calls, streaming video, and Internet (with download speeds of about 1.5Mbps) while the vehicle traveled at about 40 miles per hour.

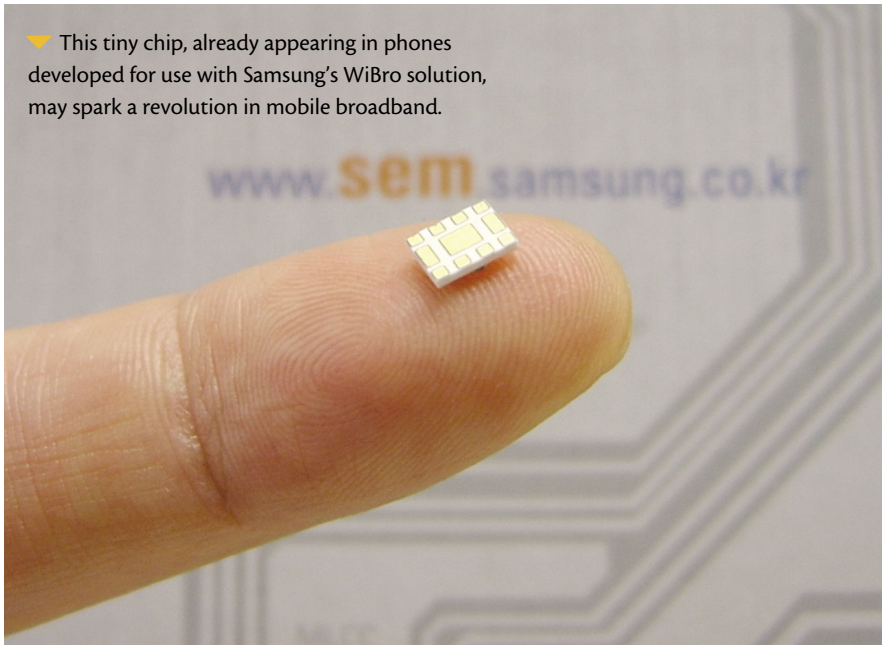


Beceem Communications have already developed pre-certification mobile WiMAX solutions. (Certification has not begun yet; pre-certified products are those that a company asserts comply with the standard prior to testing.) Nevertheless, analysts say the future of mobile WiMAX is still up in the air, in more ways than one.

One challenge facing mobile WiMAX is that many cellular providers—companies that are some of the most enthusiastic players for mobile broadband technologies—have already made substantial commitments to other high-speed alternatives. With 43% of cell phone users (according to Sprint Nextel's 2005 U.S. Consumer Wireless Usage Study) saying they want to use their phones for Internet access, the clamor for broadband is increasing. Consequently, many cellular providers are rolling out 3G (third generation; which offers both digital voice and high-speed Internet) networks for cell phones, handhelds such as the Pocket PC, and notebooks equipped with a compatible PC Card .

Verizon already offers broadband (average 400 to 700Kbps; bursts of 2Mbps) in nearly 200 major cities through its BroadbandAccess plan, which uses a technology called EVDO. Sprint Nextel's Power Vision network (also EVDO) serves nearly 250 cities with comparable speeds. On the lower end of the scale, T-Mobile and Cingular both have EDGE networks with average download speeds of 70 to 135Kbps.

Cingular is currently introducing a new, faster (400 to 700Kbps) BroadbandConnect service using HSDPA (High-Speed Downlink Packet Access), a competing technology to EVDO. The service was available in 16 markets at the time of this writing, and Cingular asserts that it will cover most major markets by the end of 2006. At the present time, T-Mobile does not have a super-high-speed mobile access program, so it is pairing with Kinkos, Starbucks, and other companies to offer unlimited access to Wi-Fi Hotspots for a monthly fee.



This tiny chip, already appearing in phones developed for use with Samsung's WiBro solution, may spark a revolution in mobile broadband.

On a separate front, a number of companies are developing FMC (Fixed/Mobile Convergence) technologies. These will let Wi-Fi enabled cell phones switch seamlessly between cellular/3G networks and Wi-Fi-based VoIP (Voice over Internet Protocol) networks, thereby enhancing service capabilities in places (such as buildings) where a Wi-Fi signal is strong but traditional cellular signals don't penetrate. Several companies at the February 3GSM World Congress in Barcelona demonstrated either handsets or networks with these capabilities, and analysts predict they may become commonplace by 2007 or 2008.

Spreading The Spectrum

Because Mobile WiMAX outstrips even the fastest current mobile technologies substantially, and 700Kbps is not really zooming (most in-home broadband connections range from 1.5 to 8Mbps), many cellular providers are investigating the potential of mobile WiMAX. Unfortunately, any real-world application is still several years away.

The foundation for the delay is, of course, the development cycle. As anyone who follows computing knows, it takes years to bring a new product to market. But in the case of mobile WiMAX transmitters and receivers (phones, radio towers, modems, and PC Cards), the situation is more complicated than usual.

It all boils down to a question of spectrum. All wireless technologies, which operate over radio waves, occupy a certain portion of the radio spectrum. For current U.S. mobile broadband technologies, the standard spectrums are 800, 850, and 1,900MHz. All cellular providers own a license in one of those spectrums, and developers design their connected devices to work in one or more of them.

In the United States, 2.5GHz is the band originally designated for WiMAX. Sprint Nextel owns licenses for the 2.5GHz spectrum in 80% of the United States. As a condition of the Sprint and Nextel merger, the company must build a 2.5GHz WiMAX network that can reach 30 million U.S. users by the end of the decade. (The final product may be fixed, mobile, or both, but Sprint Nextel is already running trials using Samsung's WiBro product, a mobile WiMAX-compliant technology currently deployed in South Korea.)

WiMAX also runs over the unlicensed 5.8GHz band, meaning that in theory anyone could use that for a network. However, portions of the spectrum over

3GHz are not practical for mobile communications even with the signal power of WiMAX. The higher up the spectrum you go, the closer together the waves are spaced, so they don't travel as far without degrading. You'd need too many towers set up too close together to make mobile WiMAX practical past 3GHz.

Problem Solved?

In the United States, which lags in WiMAX adoption, the FCC is going to auction off the 1,710MHz and 2,110MHz frequency bands for WiMAX applications in June 2006. (Industry experts predict T-Mobile, which currently lacks enough spectrum space to roll out 3G service, to bring a few dollars to that auction.) Within the next few years, the FCC also plans to auction off the 700MHz and 450MHz bands for WiMAX, both of which are currently used for various analog services including television and public service radio. These lower frequencies are particularly attractive to WiMAX developers, because at sub-900MHz, wireless signals pass through buildings, trees, and other obstacles without losing or reducing the signal.

This may sound like a lot of real estate for WiMAX, but the sheer numbers cause problems for service providers and device developers. Providers now have to worry about obtaining a new set of licenses at considerable expense. Developers have a different concern—computer devices and radio waves really do not like each other. Each time you introduce a new frequency, engineers scramble to resolve interference issues that crop up, which slows the development cycle. Developers would rather not design for half a dozen different frequencies, but with WiMAX they may have no choice.

This Verizon phone is both Wi-Fi and EVDO compatible, foretelling a future when phones will support Wi-Fi, WiMAX, and EVDO or HSDPA.

A Rosy Glow On The Horizon

Mobile WiMAX does have some benefits over other broadband technologies in addition to increased speed (over cellular) and distance (over Wi-Fi).

Proponents of the technology say it's better at handling bad connections than HSDPA or EVDO. It utilizes a technology known as OFDM (Orthogonal Frequency Division Multiplexing), which consumes less power than Wi-Fi chipsets. With OFDM it's also possible to vary the amount of bandwidth a connection consumes based on network traffic, and even put the connection to sleep when no one is using it. During periods of low or no usage, the network can hand off unused bandwidth to other users.

Additionally, despite the cost and hassles of obtaining permission and building new towers (or putting new base stations on existing ones), most estimates say that over the long haul WiMAX network will be less complex, and the equipment will cost less per subscriber, than EVDO or HSDPA.

Several major companies, including Alcatel, Samsung, Motorola, Marconi, and Nortel, have announced they are skipping fixed WiMAX and concentrating on mobile products. In late 2005, Motorola and Intel (both of whom are working with Sprint Nextel on its mobile WiMAX lab tests) announced their current collaboration on mobile WiMAX development.

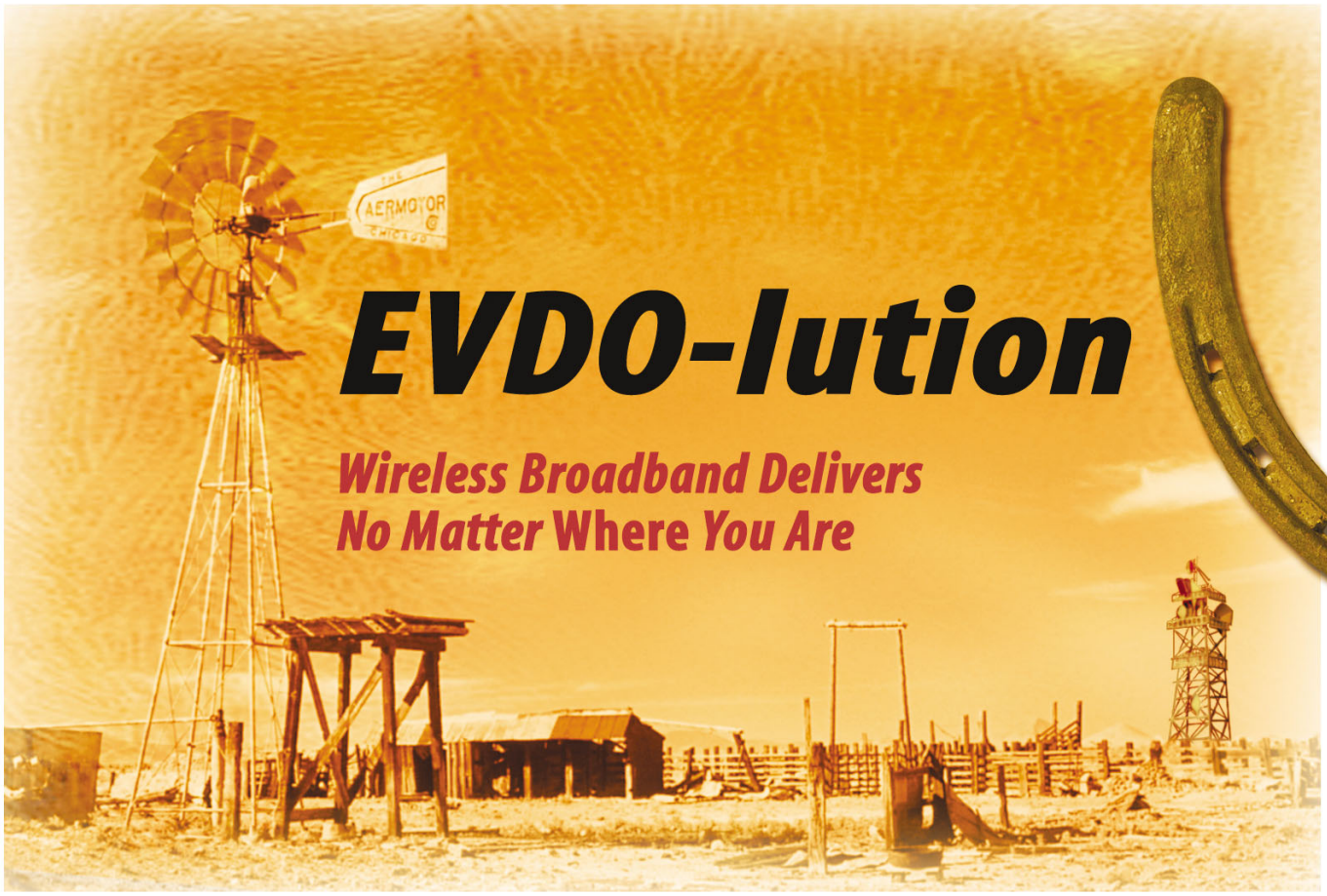
This Motorola V230 is currently only EDGE compatible, but Motorola says it will develop mobile WiMAX phones by 2007 and plans to release WiMAX-Wi-Fi broadband-cellular hybrids, as well.

Intel plans to debut notebooks with mobile WiMAX in 2007 or 2008, and Nokia has announced it will offer a mobile WiMAX phone by 2008. Motorola plans to introduce a mobile WiMAX phone in early 2007 and also plans to build a dual-mode phone that supports WiMAX and cellular, allowing subscribers to roam in and out of the two networks for maximum coverage.

"When you talk about mobility, you need dual-mode and multimode devices for roaming," says Raghu Rau, senior vice president of global marketing and strategy for Motorola, at the time of the announcement. "All the wireless technologies—Wi-Fi, cellular and WiMAX—will be complimentary." Bernt Østergaard, vice president and research director at Forrester Re-search, agrees. At GigaWorld 2004, Østergaard noted that WiMAX "is not going to replace 3G but it will create the integration between wireless LAN (local-area network) and WAN (wide area network)."

Monica Paolini of Senza Fili Consulting, one of the companies predicting mobile WiMAX to explode, says the technology may open the door to a new generation of providers. "Service providers that are eager to enter the mobility and portability market but do not have cellular spectrum, will drive WiMAX adoption," says Paolini. However, she asserts the hottest markets will be "countries like Korea with a high demand for portable and mobile services."

by Jennifer Farwell



EVDO-lution

Wireless Broadband Delivers No Matter Where You Are

With all of the cellular technologies and terms tossed around today, it's hard to keep things straight. But one technology, EVDO (Evolution Data Optimized), deserves special attention. EVDO (pronounced as individual letters), or sometimes called DO for short, set the standard for wireless broadband networking by delivering speeds that are comparable to the wired broadband we use at home and work.

EVDO has great potential to change the way we work, live, and play using our mobile devices. But in order to better understand EVDO and its uses, let's take a step back to see where EVDO began.

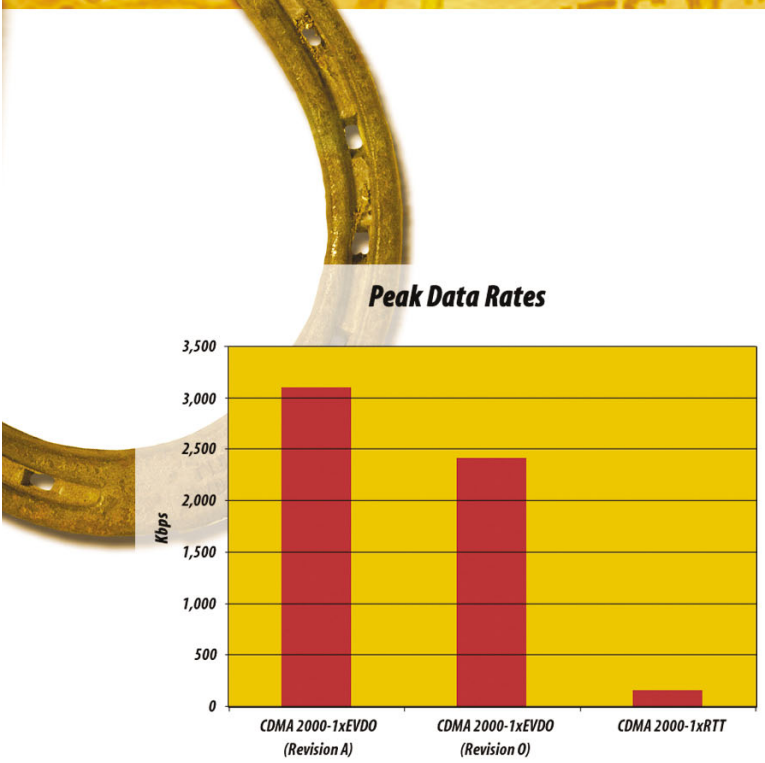
by Jennifer Johnson

A Brief History Lesson

EVDO dates back to 1999, when QUALCOMM developed the initial design of 1xEVDO (or EVDO for short) in order to meet IMT-2000 (International Mobile Telecommunications 2000) requirements for a method of stationary communications with downlink speeds greater than 2Mbps (megabits per second). The goal of IMT-2000 was to create guidelines for high-speed mobile, voice, data, Internet, and multimedia services that use cellular technology.

A member of the CDMA2000 (Code Division Multiple Access 2000) family, the initial name for EVDO was HDR (High Data Rate). After ratification by the ITU (International Telecommunication Union), the name changed to 1xEVDO. At that time, 1xEVDO stood for 1x Evolution-Data Only. Due to possible negative connotations associated with the word "only," the name was later changed to stand for 1x Evolution Data Optimized. The name is derived from the fact that EVDO is a direct evolution from the CDMA2000 1xRTT (1 times Radio Transmission Technology) standard and carries only data traffic.

1xRTT provides two to three times dial-up speed and is available anywhere a cell phone can receive a signal. Typically, most carriers have limited 1xRTT speeds to 144Kbps (kilobits per second). However, 1xEVDO improves upon the 1xRTT standard by adding HDR capability



EVDO Revision A provides significantly faster speeds compared with previous EVDO technologies.

and using time-division multiplexing on the forward link.

In February 2002 the first EVDO standard, Release 0, launched commercially. With Release 0, the standard for high-speed wireless broadband using cell phone lines was set. EVDO Release 0 has a forward data link speed of up to 2.4Mbps and a reverse link data rate up to 153Kbps.

As with all other technologies, EVDO continues to improve. First, software enhancements were created for existing EVDO Release 0 networks in order to provide QoS (Quality of Service) and Gold Multicast capabilities. With these software enhancements, carriers can improve the experience for their customers and still keep their upgrade costs at an affordable level.

After the EVDO Release 0 software upgrade, the next major enhancement to EVDO came in the form of a hardware and software upgrade known as EVDO Revision A. Revision A increased maximum speeds to 3.1Mbps on the forward link and 1.8Mbps on the reverse link. The increase in data rates from Release 0 to Revision A is significant and can improve QoS capabilities, along with enabling new bandwidth-intensive applications.

In addition, Revision A has air interface enhancements that reduce latency and therefore improve data rates. By supporting low-latency services, Revision A enables VoIP (Voice over IP) and video telephony on the same carrier with simultaneous delivery of voice and data. Also, EVDO Revision A is fully backward-compatible with Release 0 networks. Both revisions of the EVDO standard are considered 3G technologies.

EVDO Today

In its current form, EVDO is a popular offering for cell phone providers, and rightfully so, given its potential. EVDO provides an always-on connection that is similar in speed to a DSL (Digital Subscriber Line) connection such as the one you might use at home. Although it travels over cellular phone lines and must occasionally switch towers, your EVDO device should experience seamless roaming. In many places, 1xRTT service is available even when EVDO is not. So while you may not be able to enjoy the high-speeds of EVDO in rural parts of the country, you'll still be able to roll back and use the slower 1xRTT technology to connect to the Internet in those areas.

For business travelers, EVDO provides the ability to videoconference with colleagues, exchange files, chat with co-workers, and much more from your cell phone. EVDO also enables real-time interactive games that are useful for the few moments of downtime that you may find in your day. In addition, because EVDO gives wireless and personal electronic devices the ability to do more than they have in the past, EVDO is helping to encourage the development of a new generation of multipurpose devices.

It's quite likely that, as EVDO becomes more available throughout the United States, we'll see more and more business travelers ditch their laptops in favor of a feature-rich multifunction device about the size of a smartphone. With EVDO, travelers can securely access their corporate VPN (virtual private network) from anywhere they can receive a cellular signal. Also, because users can use a variety of applications, including Microsoft Office, business travelers will be better equipped with EVDO to conduct business from any location, including the transfer of mission-critical information back and forth between home offices and the field.

Even though EVDO can provide travelers with the ability to lose the extra weight of their laptops, we can all agree that a laptop is still the best device for some tasks. (We'd hate to try to edit a large, graphic-intensive PowerPoint presentation on our mobile's tiny screen.) For those times when you insist on carrying a laptop but still can't go without an Internet connection, EVDO can still provide a solution for you. By inserting an EVDO PC card into your laptop, you can experience the same high-speed connectivity as your cell phone but with the additional power and functionality of your laptop.

Devices Of Today & Tomorrow

In addition to a variety of cell phones and smartphones that use EVDO, a few PC solutions are also available. Some of the EVDO PC data cards include the Audiovox PC5220, Sierra Wireless AirCard 580, Kyocera KPC650, and the Audiovox PC5740. These PC cards typically plug in to the PCMCIA slot on a laptop and enable you to surf the Internet or connect to your company's VPN using the EVDO network.

In the future, look for integrated EVDO functionality in laptops and other mobile devices. In September Verizon Wireless and Lenovo announced their plans to integrate the Verizon Wireless EVDO network functionality into their ThinkPad notebooks. HP and Verizon Wireless also announced a partnership in September with plans to bring the EVDO connectivity to HP mobile business devices such as notebooks and other mobile devices.

At press time there were quite a few popular cell phone and smartphone offerings available from many of the U.S. EVDO carriers. Some of these phones include the new Palm Treo 700w, UTStarcom PPC6700 or XV6700 (different models are for different wireless carriers), Samsung SCH-i730, and the Motorola RAZR V3c. Although these phones and many others offer EVDO capability, you still have to purchase an EVDO data plan to make full use of the EVDO services. Prices for EVDO plans range from carrier to carrier. Sprint and Verizon Wireless both offer unlimited EVDO access for $59.99 per month, assuming you've met qualifications such as a compatible voice plan.

Use an EVDO wireless PCMCIA card, such as the Sierra Wireless AirCard 580 for Sprint, to connect to the Internet via your laptop.

Coverage In The United States

Given the promises and abilities of EVDO, you may be wondering how you can get in on the action. Unfortunately, it can be hard to recognize EVDO offerings because they are typically marketed under alternative names. According to 3G Today (www.3gtoday.com), there were nearly 20 million EVDO subscribers worldwide as of November 2005. And at press time, there were seven EVDO operators in the United States: Mobile ESPN (mobile.espn.go.com), Amp'd Mobile (get.ampd.com), Sprint Nextel (www.sprint.com), Midwest Wireless (www.midwestwireless.com), Alltel (www.alltel.com), ACS (Alaska Communications Systems; www.acsalaska.com), and Verizon Wireless (www.verizonwireless.com).

Currently, EVDO roaming between carriers is not available in North America. Therefore, it's important to choose an EVDO carrier that suits your coverage area. Let's look at the features and services of each of the seven EVDO providers previously mentioned.

Mobile ESPN. If you watched the Super Bowl on Sunday, Feb. 5, you may have caught two commercials advertising the new Mobile ESPN. Mobile ESPN operates as an MVNO (mobile virtual network operator) using the Sprint nationwide network for wireless voice and data service. The data services, including fast access to ESPN's sports content, full Internet browsing, email access, and downloads, are made possible using Sprint's EVDO service. Mobile ESPN is touted as the "first national wireless phone service provider targeted to sports fans." As a phone service targeted to sports fans, Mobile ESPN offers customizable ESPN content, including real-time scores, breaking news, commentary, and analysis, along with fantasy sports information and audio and video programming using unique ESPN-branded handsets.

Amp'd Mobile. Mobile ESPN isn't the only EVDO service that's fresh off the block; targeted at youth, young professionals, and early adopters, Amp'd Mobile launched on Jan. 6, 2006. Amp'd Mobile's niche is its proprietary user interface that provides quick access to content in categories such as music, games, sports, entertainment, news, lifestyles, and more. In addition to traditional voice and text services, all Amp'd handsets feature EVDO, push-to-talk walkie-talkie, digital camera, video, removable memory, high-resolution screens, built-in stereo sound, and USB connectivity for side-loading music from CDs and PCs.

Sprint Nextel. You might recognize Sprint Nextel's EVDO service as either Sprint Mobile Broadband or Sprint Power Vision. The reason for the two names is due to different target markets; Sprint Mobile Broadband targets business customers, whereas Sprint Power Vision targets the general consumer. Either way, though, as of press time, Sprint Nextel's EVDO service was available to more than 213 major metropolitan markets (defined as cities with populations over 100,000). Sometime in the early part of 2006, Sprint Nextel's EVDO service is expected to reach over 150 million people. Sprint offers both PCMCIA (Personal

The Palm Treo 700w is one of the latest phones compatible with EVDO technology.

Play games with your EVDO phone, such as The Incredibles 3D Mobile Game available from V CAST.

Moving Forward

Relatively speaking, EVDO is still considered a new technology. Still, EVDO has a strong foothold in the marketplace, along with promises and plenty of room for expansion in the future. As existing carriers expand their coverage and new carriers join the market, more and more EVDO phones and devices are sure to follow.

With all of the possibilities for using EVDO, it will be exciting to see how technology such as EVDO changes the ways in which we conduct business and connect with friends and family. Who knows? Maybe someday you'll use your mobile phone to videoconference with partners in China, relatives in Europe, or to exchange business contracts with clients on the other side of the country.

Computer Memory Card International Association) computer cards and handheld devices that are compatible with Sprint's EVDO network.

Midwest Wireless. Although some may call Midwest Wireless a smaller player in the market because they are limited to Minnesota, Wisconsin, and Iowa, Alltel noticed them. On Nov. 18, 2005, Alltel announced that they are in the process of purchasing Midwest Wireless in a deal set to close in the first half of 2006. At press time, Midwest Wireless offered five consumer data plans with fees ranging from free for 1MB/month to $79.95 for unlimited megabytes. These plans are designed for all users on compatible phones, PDAs, or laptop PCs. For business users, Midwest Wireless offers Mobile Sync and Mobile Office. Both services offer unlimited data and Internet access, as well as access to your company's Microsoft Exchange 2003 server. The Mobile Office service has greater mobility and access to files than the Mobile Sync service.

Alltel. At press time, Alltel's Axcess Broadband EVDO service was only available in 12 cities. These cities with EVDO coverage include St. Pete, Tampa, Lansing, Phoenix, Little Rock, Cleveland, Akron, Oklahoma City, Norfolk, Richmond, Charlotte, and Raleigh. Because Alltel also offers 1xRTT wireless connectivity through its Axcess MobileLink network, wireless data connections will automatically transfer from the Axcess Broadband network to the Axcess MobileLink network in areas where Axcess Broadband is not available.

ACS. The Mobile Broadband Internet network from ACS is available throughout its wireless coverage area. In other words, you'll have EVDO service anywhere an ACS cell signal is present. As one of the first players in the EVDO U.S. market, ACS launched its Mobile Broadband Internet service in June 2004. In fact, Anchorage, Fairbanks, and Juneau were the third, fourth, and fifth cities in the United States to deploy EVDO. The ACS Mobile Broadband Internet network provides wireless Internet access to laptops using the ACS Wireless PC Card. Compatible phones, such as the Pocket PC 6600, are also available from ACS.

Verizon Wireless. Verizon Wireless brands its EVDO service as both BroadbandAccess and V CAST. Verizon Wireless has been the longest EVDO provider in the United States, with an October 2003 launch followed by a national rollout in January 2004. Since then, BroadbandAccess has grown to include 181 major metropolitan areas, which includes 150 million people. The service is expanding coast to coast and is currently offered in 72 major U.S. airports (defined as having more than 10,000 passengers in and out annually). BroadbandAccess is targeted primarily at the business market and focuses on providing high-speed Internet access to laptops. The V CAST service, on the other hand, is targeted at consumers and provides high-quality video, 3D games, and music. V CAST is available at locations where BroadbandAccess is offered.

3G, At Last

The Next Generation In Mobile Phones

Those of us who lived through the 1980s remember hearing about the growing cellular phone trend. We didn't know what made it tick, but would gladly pay $10 per minute to hear a distorted voice on a handset that required its own luggage. Since then, the price of service has decreased a hundred fold; handsets have become so small that we're worried about losing them in the wash; and not only do we get high-quality voice transmission on newer phones, we can watch videos, listen to music, or play games. But despite how far they've come along, cell phones have a long journey ahead of them. Technology marches on and so must we. Below, we're going to tell you about the next big step in wireless communication and what you can do to get a taste of it now. We'll also give you some of the buzzwords to keep an eye out for to keep you in step with the technology.

by David Miller

Now's The Time For GSM

The current state-of-the-art mobile phones use the GSM (Global System For Mobile Communications) protocol. This standard offers high-quality digital voice transmission and low-cost alternatives to voice calling (such as text messaging) and is so widespread it makes international roaming common (but not universal) between mobile phone operators. As with every piece of technology in the world today, this, too, shall pass. There are plans in the works to upgrade mobile phone services. We're currently past 2G (second generation) mobile services, working toward 3G (third generation). In the meantime, we're all being given the benefit of the upgrades that are available before 3G mobile services officially become available.

Stopgaps On The Road To 3G

Now that we've covered the difference between the different generations, let's look at what exists in the space between them. An organization called 3GPP (Third Generation Partnership Project), composed of agencies in Europe, Japan, North America, China, and South Korea, is responsible for the development of a global mobile phone system and has paved the way to 3G. 3GPP provides standards in the form of releases. Each release (there have been six as of press time) incorporates hundreds of documents that specify exactly what mobile handset manufacturers, network providers, and anyone else with interests in mobile technology will have to do in order to make a truly worldwide communications solution.

The current level of releases isn't quite to 3G standards, but it's head and shoulders above 2G. So what is it? Well, developers have coined the term 2.75G. The name is given when a mobile phone does not meet 3G standards but is marketed as if it did. For instance, if a phone is a CDMA phone but won't work on networks for multiple carriers, it's considered 2.75G. Even if the phone is 3G-capable but isn't strongly marketed as such, the phone is considered a 2.75G handset. An example of the latter is EDGE (Enhanced Data rates for GSM Evolution) technology, which offers 3G-like service without the need for a 3G handset.

EDGE technology is an add-on for 2G GPRS (General Packet Radio Service) mobile phones. There are several benefits to modifying a wireless network to use EDGE. First, the transmission rates for EDGE technology are also almost triple the current GPRS technology. Whether you're on a GPRS or EDGE network, data is sent as packets. These packets contain not only the data being sent but also certain safeguards to ensure that the data received is the same as what was sent. These check digits tell the receiver whether or not he's heard the correct thing. If they're wrong on a GPRS network, the data packet is resent until it comes through correctly. It's like the game "telephone" you played as a child: The person at the front of the line said "Tomorrow it will rain," but by the end of the line you heard "Tom's mom is in Spain."

EDGE networks make use of incremental redundancy, or ARQ (automatic repeat request), to eliminate the need for resending the data. As its name suggests, EDGE transmitters send extra redundant information so that if the check digits don't check out, the receiver can just look at one of the redundant streams of data to catch what it's missed. Because the time isn't wasted resending information, the overall transmission time is decreased.

The American version of the S700i, the Sony Ericsson S710a (www.sonyericsson.com) S710a will offer tri-band GSM 900/1,800/1,900MHz connectivity, EDGE support, an XHTML browser, integrated FM radio, an MP3 player, and a video player, as well as a hands-free kit, which doubles as an antenna for the radio.

2G vs. 3G

Before we dive into the issue, we should explain what we mean by 2G and 3G services. 2G phones have limited data transmission capability but operate on one of the digital networks: FDMA (Frequency Division Multiple Access), which puts each call on a separate frequency; TDMA (Time Division Multiple Access), which assigns each call a certain portion of time on a designated frequency; and CDMA (Code Division Multiple Access), which gives a unique code to each call and spreads it over the available frequencies. Typical 2G benchmarks are digital voice transmission, text, or SMS (short message service) messaging, and in some cases handsets that can be modified to work on any network in the world with the addition of a SIM (subscriber identification module) card.

A 3G phone will also operate on a digital network, but not necessarily the same as a 2G phone. The three most common network types are CDMA2000, which is based on 2G CDMA; UMTS (Universal Mobile Telecommunications System), also known as W-CDMA (Wideband CDMA); and FOMA (Freedom of Mobile Multimedia Access). Traits of a 3G phone are the ability to stream audio or video, high-speed Internet browsing speeds, and handsets that are truly world phones—useful on multiple carriers' networks.

Coming to Europe in March, the BenQ-Siemens (www.siemens.com) EF81 is a tri-band 3G phone that offers a 2-megapixel swivel camera, Bluetooth, USB connectivity, and a stainless steel keypad.

Feeding Your Need For Speed

One good use of the faster transmission rates is increased download speed. When you're trying to download an email to your cell phone, a10KB message would take 1.5 seconds on a GPRS network but only 0.5 seconds on an EDGE-enabled network. If that doesn't sound like much savings, try downloading a 4MB music video on a GPRS handset. You'd better have about 10 minutes to wait. If only you had an EDGE phone, you could be watching the video in about 3 minutes and 20 seconds. How's that for speed?

The second benefit of EDGE over GPRS is that the capacity for transmitting data is greatly increased. EDGE uses an algorithm called 8PKS (8 Phase Key Shifting) that allows for triple the data capacity as GSM. GSM uses GMSK (Gaussian Minimum Shift Keying), which only uses 1 bit to divide the bandwidth of the signal. Dividing the bandwidth gives the service provider the ability to move more packets of data through the airwaves simultaneously. Instead of only using 1 bit for the modulation, 8PKS uses 3 bits of information. This 3-bit identification number allows up to eight different data streams to be carried in the same signal, resulting in the increase in data capacity.

If one data transmission phase is occupied, the service just picks another one. This means that more people can work on the network or send data at once. It also means that if no one is sending or receiving data, the bandwidth is unused until it's needed. So, in the end, many more EDGE users can share the same reduced bandwidth and still have an increase in speed and bandwidth.

Finally, on top of all of the increased capacity and speed, the underlying network technology is the same as that of TDMA networks, so there's no need to drastically change networks. The only thing the networks need to do is install a single EDGE transceiver unit to every cell. This unit will not only handle the EDGE traffic when necessary but also current GPRS traffic.

The bottom line is that with EDGE, you'll have access to all the goodies without having to wait for a 3G phone. EDGE users will be able to access the Internet at DSL- or cable-like speeds, watch TV or listen to the radio in real time, play 3D games over the Internet—all from just about anywhere in the world. That's not the end of the story, though.

Is That All? Hardly!

Many benefits of a 2.75G phone are the same as those as you would get with a 3G handset. But just like your desktop computer that became obsolete as soon as you opened the box, you'll soon be required to purchase new hardware to access the networks of the future. The next groundbreaking development on the horizon is a true 3G network.

Currently, due to some disputes about licensing fees for the bandwidth to operate a worldwide cellular network, only Japan and Korea have truly nationwide 3G networks. The rest of the world is catching up, though. Three of the technologies leading the race are FOMA, W-CDMA, and UMTS.

W-CDMA, which uses CDMA multiplexing, is actually the underlying technology for the other two, but each has its advantages. FOMA is a protocol that is currently being used in Japan and offers options for global roaming, which may or may not allow you to use a USIM (Universal Subscriber Identity Module) card to change handsets. UMTS is being used in both Europe and Japan, and as of January 2006, Cingular (www.cingular.com) has UMTS networks in several major U.S. cities. Most phones being offered will switch automatically between UMTS and GSM networks, making it possible to roam between different carriers' networks.

Upcoming 3G phones are being marketed as "world phones," but that's not entirely true—not until all networks operate on the same frequency range. UMTS requires frequencies ranging from 1,885 to 2,025MHz for uplink and 2,110 to 2,200MHz for downlink, but in the United States, 3G networks have bandwidth on the 1,900MHz frequency only. That's a problem because this is the frequency of current 2G PCS services. The FCC recently promised to free up bandwidth on 2,100MHz, which is a big step, but we're not there yet.

The reasons behind different frequency cellular networks might not be as nefarious as the reasoning behind differing railroad gauges during the Civil War, in which the South used a wider railroad gauge to hinder the North's movements during battle (or so the urban myth goes), but the result is the same.

Until everyone can agree on and have access to a common frequency spectrum, the most unified communication protocol is just as useless as a Northern locomotive on a Southern track.

Smartphones by Symbian (www.symbian.com) offer the productivity of a handheld computer by incorporating a calendar, address book, music, movies, email, instant messaging, and connectivity with your PC, as well as the connectivity of a FOMA wireless network.

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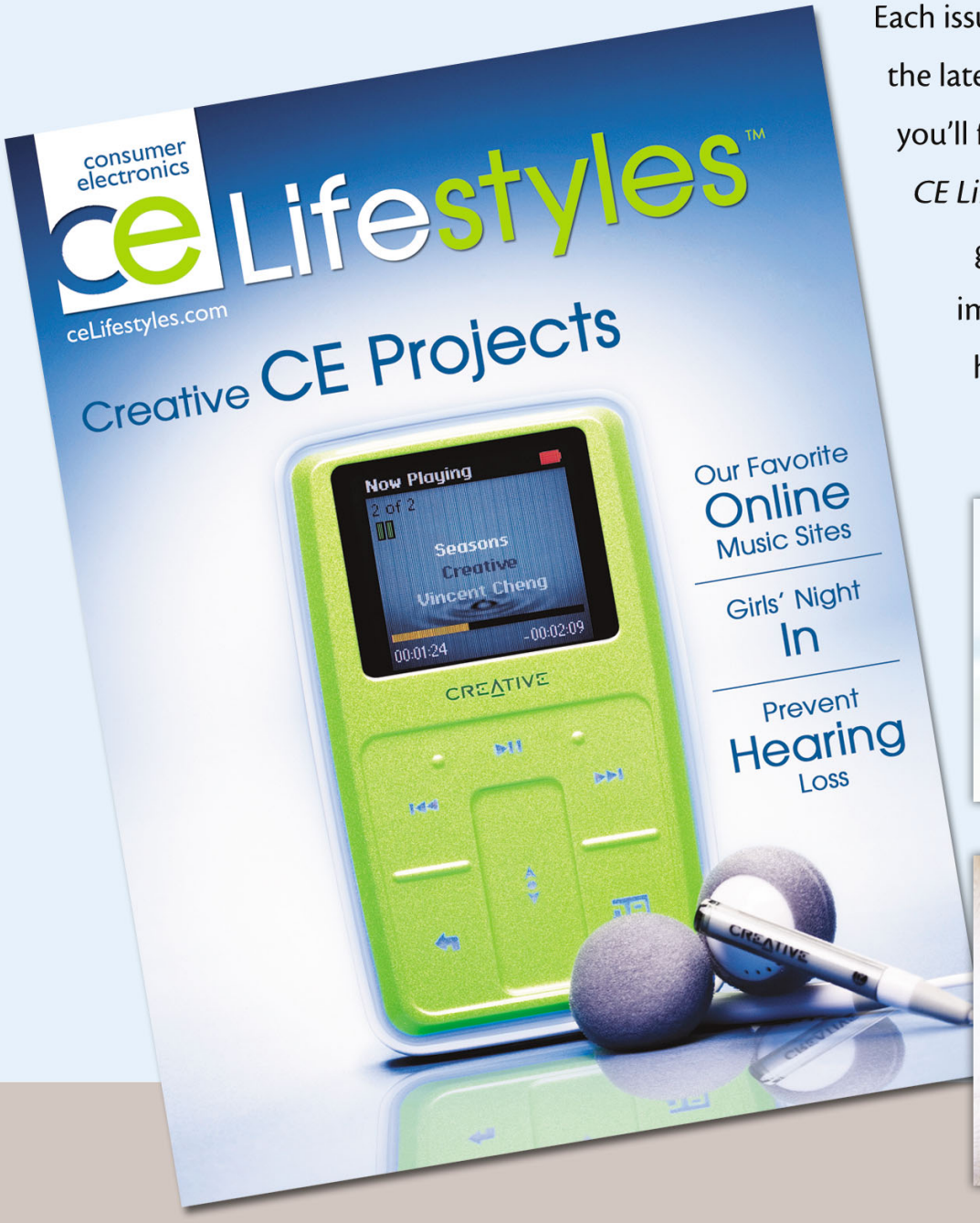

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Repair & Restore

Keep Your Notebook In Tip-Top Shape

Compared to a desktop computer, working on your notebook computer may seem a bit frightening. The components are small and delicate, and they are certainly more cramped than the parts on your desktop. But manufacturers have designed notebooks to be upgradeable, and many components are easy to access and replace.

We'll show you how to keep components clean to avoid damage to your notebook. We'll also describe how to access and replace your notebook's memory, hard drive, optical drive, and display components. Maintaining your notebook can help you avoid the expense of replacing it before its time.

Keep It Clean

To prevent repairs on your notebook, it's important to routinely clean its components. Supplies you'll need on hand include a can of compressed air and a soft, lint-free cloth or computer wipes that are safe for notebook displays.

Keyboard. To prevent keys from sticking, you should periodically clean your computer's keyboard. Before you begin, make sure your notebook is turned off. Use your can of compressed air with a straw extension to blow air between the keys to remove lint, dust, and other debris. You can also dampen a lint-free cloth with water to clean the surface of the keys and touchpad, if applicable.

Cooling vents. It is important for any computer to stay cool. The electrical components inside of a notebook or desktop PC create heat, and overheating can damage sensitive circuitry. All computers are equipped with a cooling system and internal fans designed to prevent overheating. Over time, debris can clog the vents that allow air to flow through your notebook. To prevent this, periodically blow the vents off with compressed air when your notebook is turned off.

I/O ports. The ports and connectors on your notebook can accumulate lint, dust, and debris. You can blow out the

debris with compressed air when your notebook is off.

Display. Notebook displays collect smudges, dust, and grit. To clean them use a soft, lint-free cloth dampened with water or special computer wipes that are safe for displays. Gently wipe the display to remove dust and grime.

Prepare For Replacement

Before you start removing and replacing your notebook's components, we recommend following these tips to prevent damage to your system and unnecessary expenses.

Check the documentation and warranty. Always check the notebook manufacturer's support materials and warranty information before you replace or repair a component. If your notebook is under warranty, let the manufacturer handle any repairs. If not, check the manufacturer's Web site for service guides or repair/replacement guides. Note that our disassembly guidelines are general; some manufacturers provide documentation with detailed steps specifically for their notebooks.

Prevent ESD (electrostatic discharge). Electronic circuitry is sensitive to static electricity, which can build up in your fingers or in other conductive materials. To prevent ESD you want to wear an antistatic wrist strap, work over an uncarpeted floor, avoid touching pins or electronic circuitry, and keep all new components in their antistatic packaging until you need them. Finally, periodically ground yourself by touching an unpainted metal surface.

Easy does it. Many covers for notebook components are plastic. It almost goes without saying that when working with plastic covers you should avoid using excessive force. But many of us become accustomed to a more rugged model and forget how easily the average plastic cover can be damaged. Internally, components such as cables and connectors are small and thin. Handle cables by their connectors when possible and avoid bending, twisting, and unnecessary tugging.

Get organized. Before you start, make sure you have the necessary tools to complete the task at hand. Order the correct replacement parts, verify the type of screwdriver needed, gather some small containers to hold screws, confirm whether the task requires additional tools or equipment, and obtain any ESD supplies you may need.

Prepare the notebook. To prevent damage to your computer and to yourself, turn off your notebook and disconnect the AC power. Next, remove the battery and disconnect all peripherals and add-on components such as a mouse, printer, PC Card, docking station, or external monitor.

Upgrade, Repair, Or Replace It

Many of your notebook components are replaceable and upgradeable. To familiarize you with the process, we provide some general instructions for an assortment of notebook components. As we mentioned previously, you'll want to confirm whether any parts are under warranty and if so, let the manufacturer perform the work. You can also check the manufacturer's Web site for instructions specific to the notebook model you own. Before upgrading, repairing, or replacing any components, be sure to first follow the guidelines in the "Prepare To Replace" section.

> you'll want to confirm whether any parts are under warranty

Memory. Because it is designed to be upgradeable, memory is one of the easiest notebook components to access and replace. Turn your notebook over and look for the cover for the memory card(s). Some manufacturers include a rectangular symbol on the cover. Remove the screws and gently lift off the cover. You may need to slide the cover or turn it to the left or right as you remove it. Place the screws and cover in a safe place.

If you're installing the memory in an empty slot, align the notched edge of the new memory module with the tabbed portion of the slot. If you are replacing the current memory, unfasten the retention clips (if applicable) on the side of the module. Grasp the edges of the module and gently pull it out of the slot. At a 30- to 45-degree angle, insert the new memory module into the slot until you feel it is completely seated. Fasten the retention clips (if applicable); you may need to press the module down. Replace the cover and screws.

Hard drive. Ease of access to the hard drive depends on the design of your notebook. You can access some hard drives by removing a single cover, while others require you to tear down the notebook. For our general guidelines, we assume your notebook's hard drive is accessible through a single cover.

Turn your notebook over and look for the cover for the hard drive. The cover may include a hard drive symbol, which resembles a stack of circular disks. Remove the cover screws and gently lift the cover. You may need to slide the cover off or turn it to the left or right as you remove it. Place the screws and cover in a safe place.

You should now see the hard drive, which is usually held by a framework or cage that comes out with the drive. Check for any tabs that may secure the cage assembly in the notebook and disengage them. One end of the drive plugs into the notebook's internal components. Gently grasp the opposite end and pull the drive out of the notebook at a slight angle. Alternatively, some hard drive cages come with a built-in tab that you can grasp and pull. Taking care not to drop the drive, remove any screws that hold the cage onto the drive. Place the new drive into the cage framework and reattach the screws. Insert the new drive and cage assembly into the notebook, securing any tabs as needed. Replace the cover and screws.

Optical drive. If you want to create DVDs or make copies of your video

footage, upgrading a CD or DVD-ROM drive to a DVD burner is worthwhile. The process is relatively easy and requires a straightened paper clip in addition to the appropriate screwdriver to remove any screws.

Turn your notebook over and look for screws that secure the optical drive. Depending on your notebook, you may need to remove one of the other covers, such as the hard drive cover, in order to access the optical drive. After you remove the screw or screws that secure the optical drive to the notebook, insert the straightened paper clip into the small hole in the optical drive tray to eject the tray. Grasping opposite sides of the optical drive tray, gently pull the drive out of your notebook. Insert the new drive and replace the screws that secure it to the notebook. Replace any covers and screws that you removed to access the optical drive.

Display. Compared to the other components we discussed, working with your notebook's display is a more complicated operation. What's more, if you are replacing a display or display components, it's usually due to a problem. Be sure to troubleshoot all possible causes of display problems before you begin dismantling your notebook.

If the display is blank, for example, the problem could be improper Windows power-management settings, incorrect brightness settings, or a lack of battery or electrical power. To rule out a problem with the video controller, you can attach an external monitor to your notebook. If the external monitor works, the problem is likely related to your notebook's internal display or display settings.

Most do-it-yourself replacements for a display involve the inverter or backlight. An inverter supplies power to the screen and backlight. The backlight is a small fluorescent light bulb that provides a wall of light behind the display. Over time the backlight can fade, or the inverters that connect to it can go bad. The primary symptom of this problem is a very dim display.

Another possible problem is a bad video cable. The cable connects the display to the notebook. If it needs replacement, you'll likely see display quality problems such as lines or bad color. However, incorrect display settings in Windows can also cause display quality problems. Verify that Windows' display settings are correct before you order parts or dismantle your display.

If the screen is bad, you can normally see physical problems such as cracks, scratches, or other damage. In this case you can replace the screen. If you need a backlight, inverter, video cable, or screen, possible sources of parts include the notebook manufacturer, suppliers on the Internet, or eBay.

To replace the backlight, inverter, video cable, or screen, you must open up the display case. Following are some general guidelines. Remove the screws in the bezel of the display. The bezel is the frame that surrounds all four sides of the display. Look for the screws on the front of the bezel and the sides of the display casing. You may need to pry off small rubber plugs or other coverings to expose the screws.

Next, carefully remove the bezel. Depending on the design of the display, you may be able to lift the screen out of the casing. If not, check for screws that secure the screen to its enclosure. You may also need to remove other components, such as hinges or a wireless antenna, in order to remove the screen. After you lift the screen out of the casing, disconnect the video cable from its backside. Also disconnect the inverter, which supplies power to the display. Replace the applicable display component. Reconnect the video cable and inverter. Replace all screws, other components, the bezel, and screw coverings.

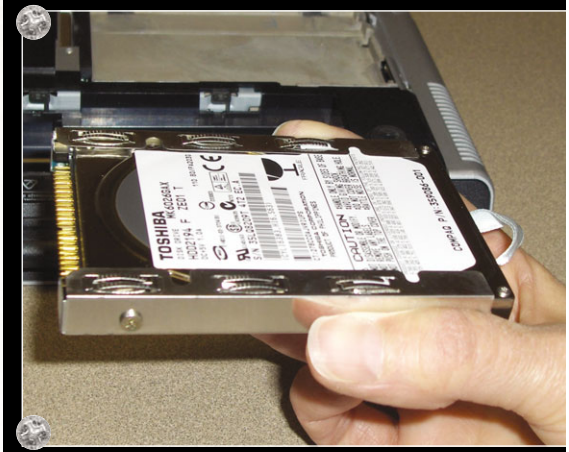
Keep It Running

Although notebook computers are built differently than desktop computers, you can repair, replace, and upgrade components in both types of systems with nearly the same ease. When you consider the expense of purchasing new equipment, the time and effort required to keep your notebook running right is minimal.

by Carmen Carmack

Most notebook component covers are located on the underside of the computer and are made of plastic. When working with plastic covers, do not use excessive force.

This notebook's memory card and wireless connection card are located in the same area.



A metal frame holds the hard drive in place. To replace the hard drive, remove the screws in the frame, insert the new drive, and reinsert the screws.

Clean Sweep

Improve Performance & Free Drive Space

When your notebook starts performing sluggishly or becomes overburdened with outdated hardware, seldom-used software, and other flotsam, a quick tune-up is in order to keep you mobile. We collected a handful of straightforward procedures (and organized them in recommended order) that can clean up your Windows XP notebook and return it to its lean, mean, former self. If you let problems go too long and the suggestions here don't help, check out the "Start From Scratch" sidebar for more drastic measures.

Be Prepared

Before you make any system changes, shut down any programs running on your computer, including background programs such as firewall or antivirus utilities. To shut down background programs, locate each one in the System Tray. If you see a double caret (>>), click it to expand the System Tray. Right-click each program icon and select Close or Exit.

It is also smart to disable your screen saver. Right-click an empty spot on your Desktop and select Properties. Click the Screen Saver tab, select None from the Screen Saver drop-down menu, and click OK. When you're ready to re-enable your screen saver, return to the Screen Saver tab.

Also, if you don't have a recent data backup, the safest course is to make an archive of important data files. If you discover during maintenance that you had a virus, be sure to scan your archived files for viruses before you move them back to your PC.

Dump The Unwanted

If you have outdated software or hardware on your system, you should uninstall it. This is particularly true in the case of devices you no longer use. Old drivers, for example, can cause conflicts with newer drivers.

Dead-end devices. To remove outdated devices and their associated drivers, check the documentation that came with the programs for instructions. (Some devices require that you uninstall related software first.) If there are no instructions, remove the device using Device Manager. Open the Start menu, select Control Panel, and double-click System. (In Category view select Performance And Maintenance, click System, and follow the remaining steps.) Select the Hardware tab in the resulting dialog box and click Device Manager.

Browse your device list, clicking plus signs (+) as necessary to expand the listings, until you locate the device you want to remove. Select the device, open the Action menu, and click Uninstall. After Windows uninstalls the device, shut down your computer and the device, and then remove the device from your PC. Restart your computer.

So long, software. You can remove programs using WinXP's Add Or Remove Programs utility, but this is not always the best method. Add Or Remove Programs scans the Windows Registry and opens the uninstaller program referenced

Visit the control panel or other preferences feature of your antivirus software to make sure your protection settings are robust.

there, but it may miss secondary operations the program might normally perform. Additionally, some software, especially those that drive hardware devices, require you to uninstall elements in a specific order.

Before you uninstall a program using Add Or Remove Programs, check the documentation that came with the software for specific instructions and follow any you find. Also, check the items listing on the All Programs menu (on the Start menu) for an Uninstall or Remove option. You may also be able to locate an Uninstall or Remove option if you run the Setup program from the installation medium. These alternatives are usually preferable to using Add Or Remove Programs.

If you cannot uninstall a program using an uninstaller or Add Or Remove Programs, contact the manufacturer for assistance. Don't try to remove a program manually by deleting its program files, otherwise you risk corrupting your system installation.

Tune-Up Time

With your hard drive free of malware and unwanted devices and programs out of the way, it's time to give your hard drive a tune-up. Three utilities, Disk Cleanup, Error Checking (formerly ScanDisk), and Disk Defragmenter, are the PC equivalent of the three musketeers where drive tune-up is concerned.

Disk Cleanup. This utility searches for and can delete temporary files that Internet Explorer and other programs store on your PC, in addition to setup files and other superfluous files. It can also compress files you haven't accessed for a period of time you specify. To initiate Disk Cleanup, open the Start menu; select All Programs, Accessories, and System Tools; and click Disk Cleanup. If have more than one drive, tell WinXP which one to check and click OK.

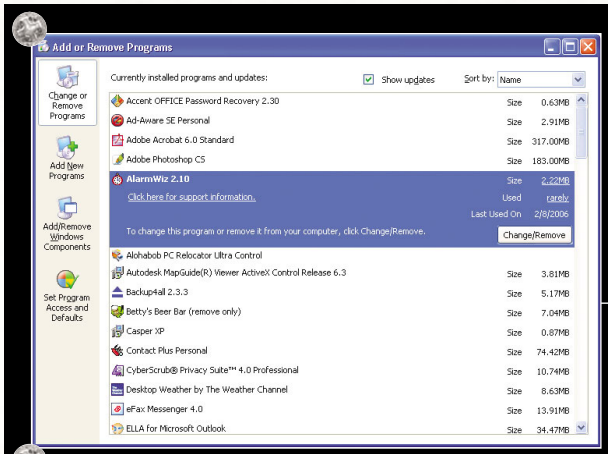
By default Disk Cleanup will not preselect all the removal options. (What it selects varies based on what is on the drive.) You can select any of the checkboxes safely. If you do not want to compress files (this minimally affects file retrieval time) or want to keep your temporary Internet files for offline viewing, deselect these options. Click OK to delete the selected files.

After clean-up is complete, skip the More Options tab unless you want to remove optional Windows components to save space. You don't need to clean up programs, and we recommend that you not clean up System Restore, which deletes all but the last system checkpoint.

Disk Cleanup will remove temporary Internet files (those cached during browsing so IE can reproduce the page quickly), but it won't clear your Internet cookies or history. If you want to delete those items, open IE, select Internet Options from the Tools menu, and click the Delete Cookies or Clear History buttons on the General tab.

Error Checking. Error Checking examines your hard drive for areas of the hard drive that are unable to store data reliably and other drive and file-system problems. To run Error Checking, double-click the My Computer icon on your Desktop or the Start menu and right-click the drive you want to maintain. Select Properties from the pop-up menu and click the Tools tab. Under Error-Checking, click Check Now.

When the Check Disk dialog box opens, select the Automatically Fix File System Errors and Scan For And Attempt Recovery Of Bad Sectors checkboxes and click Start. If you are scanning the system drive, Windows will schedule Check Disk for the next time you restart your computer. Restart immediately to run the utility.



Add Or Remove Programs can give you a snapshot of the programs installed on your system, but it's not always the best way to remove those unwanted programs.

Disk Defragmenter

After you check for errors, it's time to defragment your drive(s). Disk Defragmenter reorganizes drive data, which WinXP breaks up and stores wherever it can during normal operation, into contiguous units. This restructuring improves drive performance.

This process can take hours if your drives are large and badly fragmented. You can use your PC while Disk Defragmenter is running, but performance will degrade, so we recommend you let the process run while you are away from your computer. To run Disk Defragmenter, open My Computer, right-click the drive you want to defrag, and click Properties. Under the Tools tab, click the Defragment Now button.

Disk Defragmenter will open a display showing your drives and the percentage of fragmentation on each. You must have at least 15% of free space to run Disk Defragmenter. Select a drive and click the Analyze button. If Windows recommends you defragment the drive, click Defragment.

Plan For The Future

Now that you cleaned up your PC, establish a schedule to clean up, error check, and defrag your drives at least monthly. WinXP's Task Scheduler can automate these tasks for you, but the process requires manual intervention and for full automation that you write batch files. If you have Microsoft Outlook or some other calendar program, it's just as easy to create a Desktop alert to remind you.

by Jennifer Farwell

Start From Scratch

If Windows XP crashes frequently or the tips we provided in the main article don't help, a repair of WinXP may be in order. Repairing the OS (operating system) will revert to your core WinXP installation without deleting any data files, programs, or user settings. If the repair doesn't resolve your troubles, you can perform a clean install of WinXP, but you'll have to reinstall all your data, programs, and other files afterward.

Repair WinXP. Start your notebook with the WinXP installation or upgrade CD inserted. When the system prompts you, press any key to boot from the CD. At the Welcome To Setup screen, press ENTER. Then press F8 to accept the End-User Licensing Agreement. At the next screen, press *R* for Repair, and WinXP will reinstall itself. (Keep your CD key handy.) After installation, run Windows Update (www.windowsupdate.com) to get back up to speed on system patches.

If you own a recent, brand-name PC , you may have a recovery CD rather than a WinXP install CD. Follow the instructions that came with your PC for repairing or reinstalling WinXP.

Reformat and reinstall WinXP. This procedure will wipe your system drive clean, so it's critical you create an archive (a copy, not backup) of your data, including downloaded program installation files, music, digital photography, and other important files on CD, DVD, or a drive other than your system drive.

You may also want to use the Files And Settings Transfer Wizard to archive user elements such as fonts, Favorites, and the Cookies folder to a removable drive such as a USB flash drive. You can then restore the files to your new installation of WinXP (rather than to a different PC). You'll need to reinstall all your programs, so have your setup media and product IDs ready. If you have a broadband Internet connection, disconnect from the Internet before you perform the clean install.

When you are ready, follow the instructions above in "Repair WinXP," but when you see an option to repair WinXP, press the ESC key (do not repair). For each hard drive available to WinXP, setup will list your existing partitions and any unpartitioned space. Use the arrow keys to locate the partition where WinXP is located. Press *D* to delete the partition and press ENTER, then press *L* to confirm. Don't delete any other partitions if they hold important data.

If you have always had one partition, this is your chance to divide the drive into multiple partitions and store your data and programs safely on a different drive. (If you don't want to do this, press ENTER.) To create multiple partitions, press *C* and don't allocate all the space to your first partition. This will become the WinXP (C:) drive. Allocate a minimum of 2GB of drive space (4GB is better for the system) to run WinXP only (no programs or data files) and press ENTER.

Use the arrow keys to select Format The Partition Using The NTFS File System. (It's best for WinXP.) Don't select the Quick option because it's faster but less thorough. Press ENTER. At the next screen, press ENTER and follow the prompts to install WinXP. After Windows installs, enable ICF (refer to the "Use Protection" section in the main article) and then connect to the Internet. Visit the Windows Update Web site and update your system immediately.

Next, run Disk Management to format the remainder of your drive space (if you decided to partition it). From the Start menu, select Run, type **compmgmt.msc** in the Open field, and click OK. On the left side of the Computer Management dialog box, click Disk Management. In the right pane, right-click the line marked unallocated and select New Partition. Follow the New Partition Wizard to create and format your new partitions. You can create multiple partitions for images, music, secure documents, or whatever. If an invader tunnels through your system drive, it likely won't touch the others.

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Time For A Chat?

Are you looking for friendly and pleasant chat rooms where you can chat with others about mobile technology and other topics? Look no further because we've got it right here at PCToday.com. As a subscriber, you have access to our six computing chat rooms.

How To Access The Chat Rooms

The chat rooms offer an ideal setting for subscribers to hold extended conversations with other fellow subscribers. To access the chat rooms, do the following:

1. Click the Computing Chat Rooms link on the left side of the home page.
2. Check out the most Frequently Asked Questions and Rules Of The Board at the top of the page.
3. There are six rooms to choose from; rooms with people are noted with the number of users in parentheses next to the room number.
4. Click the numbered chat room link you wish to enter. You'll see a list of current chat users on the right, in different colors, and the conversation in the main screen on the left.

How To Change Preferences

To change the way messages display, the screen refresh rate, and the font size:

1. Click the Chat Preferences link. Select your preferences and click Save.
2. Join the conversation by entering a comment in the Type In Comment box and clicking the Send/Refresh button.
3. When you finish chatting, click Exit Room to leave.

Windows Mobile Tips

by Meryl K. Evans

Archive Messages

PMVault (Personal Mobile Vault) and PMRecorder (Personal Mobile Recorder) are free services from 1800message.com that archive your text messages, voice messages, call history, pictures, and contacts. PMRecorder works with HTC Smartphones or the Cingular 2125 only. You can download the software directly from the Web site.

Receive Free Content

Mobileplay is another service that sends free content to your PDA or mobile phone. Sign up for the service and select the content you wish to receive. The available content includes weather, news, sports, business news, horoscopes, games, and more. Go to mobileplay.com to download the application. The site has detailed tutorials complete with images to guide you through installing and using the application. While it's free, its contents contain ads.

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Unsurprisingly, this requires having plenty of storage. Lexipedia only downloads the summary sections or the start of articles to keep the size manageable. However, if you have that much space available, you can download an unabridged version at revolution.cx/Lexipedia/Lexipedia.htm.

Handwritten Notes

On occasion, you might want to write down notes instead of use the on-screen keyboard. You can write notes on your PDA using your stylus. Tap New from the bottom of the Today screen and then tap Note. If the handwriting icon isn't selected, tap it. Write your note with your stylus. If your note takes up more space than what's available, tap the scrollbar and scroll down to get more room. Sometimes this happens automatically if you write near the bottom.

If you are always writing or typing when making notes, you can change the default Writing mode, so you don't have to change it every time. While you're in Notes list (not in an open note), select Tools and then Options and tap the Default Mode arrow down. Select Writing or Typing, depending on your preference.

Another default item you can change is the template. If you use Notes for meeting notes, phone memos, to do lists, or memos, you can make the template the default template. Go back to Tools and then Options and select the desired Default template from the list. Anytime you wish to switch to another template, it must be changed in Options.

You also have the option of saving notes to a storage card, built-in storage, or leave it in the main memory. From the Options window, select the Down arrow next to Save To and make your selection.

Recognize Handwritten Notes

The Windows-mobile device can also recognize your handwriting and convert it into neat typing.

After you've written your note, tap Tools and Recognize. Your scribbles will convert into typed text. It may not be perfect, but it saves a lot of tapping. You can improve the accuracy of the recognition tool with Zoom. To use Zoom, tap Tools and select one of the five Zoom options between 75% and 300%.

Just tap any word that doesn't convert properly and tap Tools and Alternates. A list of suggested alternative words appears. If the word you're looking for is on the list, tap it. You can also tap and hold your stylus on the word and select Alternates from the list.

Screen Cleaning

Is your screen covered with fingerprints? Scratches? Smudges? All that tapping and poking will do that after a while. Here's what you can do to clean it and protect it.

Clean the screen with a commercial stove cleaner that has silica in its ingredient list or furniture polish. Using a clean cloth, add a drop of cleaner onto it. Lightly buff the screen with the cloth. Another option is to use a soft, damp cloth with diluted window-cleaning solution.

While screen protectors work well, some of them may cause the screen to become less responsive to taps and make the screen less visible. You could try putting an overhead transparencies or a clear transparency sheet onto the screen. Unlike the lamination paper, these don't stick permanently and can slip off.

Identifying The Device ID

Knowing your device's version number and device ID is helpful, especially if you have more than one device (if you buy a new one or another family member has one). Quickly find the system version by taping Start and Settings. Select the System tab and tap About.

The system version appears in the second row. The top row identifies the operating system (such as Windows Mobile 2003 Second Edition and Windows Mobile 5.0). On this page you can also see what processor you have, the amount of memory, and whether you're using the expansion slot.

Select the Device ID tab to view the Device Name. Description is an optional field that you can specify yourself. The device name helps you differentiate your device from others. It's also for syncing your device with the computer. If you change the name of an existing device, then you may have to re-establish the partnership between device and PC. However, it has a unique key that the PC uses to identify the devices. So when you sync with the new device ID, it should display the new name.

Two devices can't have the same device ID. If you get a new device, first sync the old one with the computer. Give the new device a different name and re-establish partnership with the previous device's account, and all your data should transfer.

You can sync your device on two computers, work and home, for example. But if you need another one for the laptop or other PC, there are third-party applications that make this possible. ManyPartners ($5.95; www.handango.com) from MyDocs-Unlimited is one such program.

Create A Partnership

When setting up a new device, it will automatically create a partnership on its own. However, if you change the device ID or need to re-establish a partnership between device and PC, you need to take different steps. Put the device into its cradle and a New Partnership window should appear. Yes should be selected, so click Next twice. On the conduits window, select the conduits you want to synchronize or use the default setting. Click Next until you see the Finish button. Click it, and you're done.

Pocket PC Buying Tip

Why carry an MP3 player and a PDA when you can combine the functionality of both in one device? The HP iPAQ rx1955 Pocket PC (www.hp.com) can play WMA (Windows Media Audio), MP3, and WMV (Windows Media Video) formats. And you can make your own music with its built-in recorder. With a suggested price of $299, it's a good deal.

The HP iPAQ rx1955 Pocket PC (www.hp.com) plays music and videos. Its list price is $299.

Palm OS Tips

by Meryl K. Evans

Screen Protection

Once a screen gets scratched, it's difficult to fix it. Instead, be prepared by protecting the screen and avoid scratches. Even if you use the stylus with the device, it can still get marks and scratches. Scratches can affect the ease and accuracy of entering or selecting content.

While you can buy thin sheets of plastic from various vendors, there's a cheaper alternative: removable tape that uses a similar adhesive as sticky notes. This tape comes in various sizes, so you can buy tape that fits over the Graffiti area or the whole screen. Users have said it's easier to use the tape than an actual screen protector, and you won't have problems with air bubbles.

The tape has a slightly rough surface that might make it easier to enter characters than without it. The drawback is that you may have to change the tape once, twice, or several times a month, depending on the wear it sustains.

Falling Prices

Palm often cuts prices on current devices when it has or is about to release a new device from the same category. So if you're looking to ensure that you have the latest and greatest device, watch for falling prices—it's almost a safe bet that something new is coming soon. The LifeDrive (see the Palm Buying Tip sidebar) costs $50 less than when it originally came out. Because it's the first mobile manager from Palm, it won't be a surprise to see another one arrive in the near future—possibly a device that combines the Treo and LifeDrive.

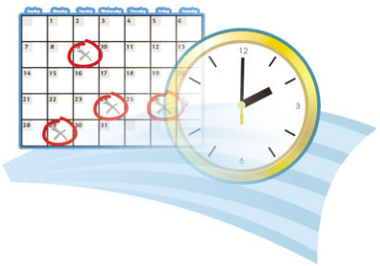
Track Your Movies & Books

Have you ever bought a book or movie only to later find out you already had it? Let your handheld device prevent this from happening. You could use several of Palm's native applications for managing your list.

Start a new Memo and just add every movie or book you have. Then let Find search for the title rather than trying to alphabetize or scroll through your long list. You can do the same thing by opening Documents, which can manage Word and Excel files. Another option is Contacts. Create a new category called Books, Movies, or whatever you want. Enter the titles into the Last Name field.

If you want to go all out and include more than just the title, you can add that info into these resources or go with a third-party application. Many are available from sites such as PalmGear.com and Handango.com.

When Appointments Are Tentative



In Outlook you can mark an appointment as Busy, Free, Out Of Office, or Tentative. While you can't do that with the Palm, you can come up with your own system. Enter a symbol next to the appointment to represent the status you wish to use. Next time you have lunch plans that aren't set in stone, enter it as **% Lunch with Joe**, where the % represents "tentative."

As an alternative, you can use colors instead of symbols. From the Palm Desktop software, tap Tools and Categories. Rename the categories to the status names. The next time you have a tentative event, assign it the appropriate color.

Closing Applications

On PCs and on the other brand of handheld devices, you have to close applications, otherwise they stay open and use up resources. That's not an issue with Palm-based devices. When you switch applications, nothing remains open in the background. The only things you need to close or save are documents from within the Documents application.

All applications are accessible from the Home menu. You can quickly switch recently opened applications by tapping and holding your stylus over the House icon. The last six open applications appear in a pop-up box.

Finding The Right Case

Most cases that come with the mobile device are basic and may not fit your needs. You have many choices when shopping for a case. Before looking for cases, consider how you prefer to carry your device. Do you prefer carrying it in a purse, briefcase, pocket, or binder, or perhaps on your belt? Do you want the case to hold anything else, such as pens, credit cards, business cards, a checkbook, or paper?

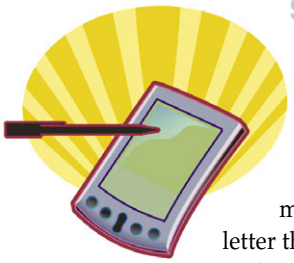
How do you want to close the case? By zip or snap, or perhaps not at all? When looking at snaps, be aware that some have a magnet that could adversely affect the device or credit cards you carry in the case. If this is a concern, contact the device or case manufacturer to find out if the magnet affects anything or if the device would be impacted by any magnet.

Cases come in leather, metal, durable polycarbonate (plastic), silicone, and fabric. If your PDA likes to take a dive often, having something to keep it well-protected is a wise move.

Some cases let you put the device into its cradle without removing it, while others require that you take the device out of its case because the case doesn't have an opening for connecting to the cradle or USB adapter. Also, see if you can access the ports and buttons with the case on.

Cases can open like a book, flip up and back, or don't flip at all. Book-style cases open left or right. This might matter depending on which hand you write with and which hand holds the device. For right-handers, a cover that opens to the right might be better because it doesn't interfere with the left hand holding the device. However, some covers don't fold back enough and make it harder to write when it opens on the same side as the writing hand.

The following companies make or sell cases for Palm-based and other devices: Bellagio (www.bellagiodesigns.com), Belkin (www.belkin.com), BoxWave (www.boxwave.com), Covertec (www.covertec.com), InnoPocket (www.innopocket.com), Krusell (www.krusell.se), Otterbox Armor (www.otterbox.com), Saunders RhinoSkin (www.saunders-usa.com/rhinoskin), SenaCases (www.senacases.com), Targus (www.targus.com), and Vaja (www.vajacases.com).



Select A Menu Item

Most commands have a shortcut available, but you may not use them often enough to remember the shortcut letter that follows the command stroke (drawing a slant starting in the lower-left corner and working up to the upper-right corner).

Speed up the menu item selection by tapping the Menu icon or tapping the top of the screen to open the menu. Once the menu appears, write or type the letter, and the program will run the command.

Palm Buying Tip

Those who want a device that holds digital content including photos, movies, music, and lots of documents will want a mobile manager. LifeDrive (www.palm.com) is Palm's first product in the mobile manager category, and it comes with a built-in 4GB hard drive so that it can hold all those media files, which are typically larger than the average file. The device, which comes with a built-in voice recorder, Wi-Fi, and Bluetooth, retails for $449.

Palm LifeDrive (www.palm.com) is Palm's first product in the mobile manager category, retailing for $449.

BlackBerry Tips

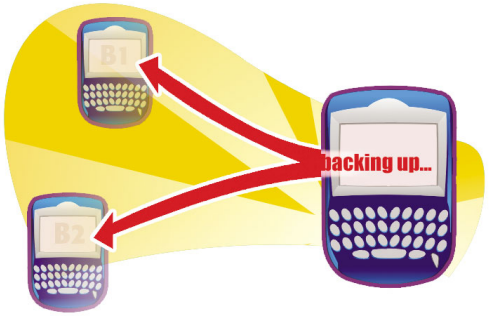
by Joe Peacock

As all BlackBerry users know, there's a potential that we may not be able to use our beloved devices in the very near future. Provided this unthinkable situation become a reality, the very first thing we need to consider is what will happen to all of our data if the service is shut down and we have to move platforms.

An unfortunate reality of BlackBerry use is that because it's so versatile and handy, many of us haven't ever really performed a backup of our data. So this special edition of our BlackBerry Tips article will focus on backing up the data on our BlackBerry devices and, if necessary, potentially converting it over to another format.

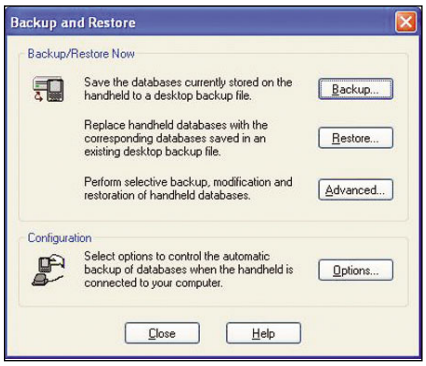
Backing Up Your Data

If you've installed the BlackBerry Desktop Manager software on your desktop or notebook PC, you will see that it has a feature called Backup And Restore. This feature enables you to back up everything (or, if you prefer, just selected items) on the BlackBerry to a file on your PC. Of course, we advocate a routine backup of your data on principle alone. Should you ever damage or lose your BlackBerry and have to get a new one, you would have all of your emails, contacts, appointments, applications, and other items in one place for quick and easy restore. Given the current climate of the Research In Motion vs. NTP battle, even those who don't back up routinely should consider doing so.



Double-click the Backup And Restore icon (or select it and click File and then Open) to open the Backup And Restore dialog box. From here you will see several backup options. The one we will cover here is the Full Backup option. A full backup saves everything on your BlackBerry unit to a file on your computer's hard disk. By default, the file is named "Backup-(yyyy-mm-dd)," where yyyy is the year, mm is the month, and dd is the day. A typical backup file name might be Backup-(2006-04-12), which tells you that the backup file was created on April 12, 2006. This is so that you can have a selection of backups to restore if the need should ever arise. (For example, you accidentally deleted an important message on Tuesday but didn't notice it until after you did your Wednesday backup. If you didn't have multiple restore points to choose from, that email might be lost forever. For this reason, we recommend having no less than three concurrent backup files at any given time. Any less, and you might run into a situation where data is permanently lost; any more, and you start taking up large amounts of space on your hard drive with BlackBerry restores.) You don't have to use this default file name, however; you can easily change it to whatever you want.

To begin a full backup, simply click the Backup button in the Backup and Restore dialog box. This will open a dialog box where you can select the file name and choose a location on your computer in which to save the file. (We actually use a specific folder called BlackBerry Backups within the My Documents folder for our backups.) If you choose a different folder, just remember the folder name and where it is located on your computer. The file that is created will have an .IPD extension. This file type is specific to the BlackBerry, so you should not change the extension to save the file as some other type. Doing so may prevent you from using the backup file for a restoration.



To begin the backup process for your BlackBerry, click Backup in the Backup And Restore window. To restore data from a previous backup, click Restore.

Back Up To Outlook

The above process is very useful for general backup purposes. However, should the BlackBerry service go down and you are forced to move to another platform, you will need to have your data accessible in another format other than the BlackBerry-specific .IPD format. Lotus Notes and Microsoft Exchange users, rejoice! Your email, calendar, and contacts are already stored on the server and will be available to almost every mobile device platform out there today. However, if you aren't using Lotus Notes, Microsoft Exchange, or any other central communications server environment, you will definitely need a non-BlackBerry solution to hold your data. Most business-use notebooks and desktops come with Outlook or Outlook Express installed; for this reason, we will cover backing up your BlackBerry to Outlook.

When you start up BlackBerry Desktop Manager, you will see an option that says Intellisync. Double-click this icon to bring up the Intellisync window. From here, make sure that you have Synchronize PIM checked and then click the Configure PIM button under the Configuration heading.

From here, you will want to check all the available options (usually named Address Book, Calendar, Memopad, and Tasks). After doing this, highlight each option and click the Choose button to select the Translator you will use for backups to your external application. You will scroll down until you see MS Outlook 97/98/2000/2003 in the list. Make sure to click Synchronize as your data transfer option, click OK, and close the Intellisync dialogue. Now, perform a sync with your BlackBerry to move all of your relevant data into Outlook.

Restoring A Backup Job

In the unfortunate event that something terrible happens to your BlackBerry, you will now be in the position to restore all of your data to any BlackBerry device. The Restore feature works almost exactly the way that the Backup feature works. In the Backup And Restore dialog box, click the Restore button. This will bring up the Restore dialog box, allowing you to choose the backup file you would like to restore to the BlackBerry device. Select the file and click Open.

You will see a transfer window appear showing the progress of the restoration. It is possible that you might be warned that any current information in various databases will be replaced with the information in the backup file. Naturally, this is what we want to happen, so click OK and continue with the restoration. Once the restoration is complete, you will be returned to the Backup And Restore dialog box. Your BlackBerry unit should now be restored to the state it was in on the date you performed your selected backup.

Will BlackBerry Be Shut Down?

That's the $1 billion question. Literally. As of the time of this writing, Judge James Spencer of the district court of Richmond, Va., stayed an injunction against Research In Motion, leaving the service up and running—for now.

The judge did, however, go on to say, "The simple truth, the reality of the jury verdict has not changed," noting that RIM had been found to be infringing on NTP patents. The judge indicated he would issue a decision on an injunction "as soon as reasonably possible," according to Reuters reports.

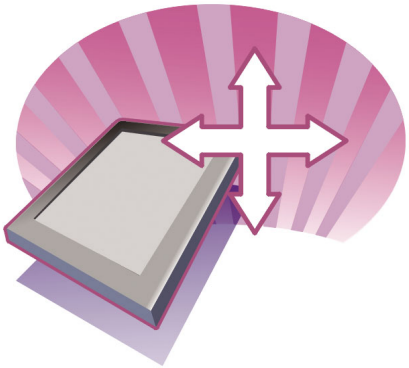
So where does that leave us? Unfortunately, for now, it's a state of limbo. Whenever the judge fancies, he could issue an injunction to stop RIM from using the portions of the BlackBerry service which infringe upon NTP's patents. Of course, RIM claims to have a workaround technology called Multi-Mode Edition (www.blackberry.com/select/mme) that will solve the issue and keep the millions of subscribers who love and adore their BlackBerry devices typing away on the tiny little keyboard.

Add to this the fact that on Feb. 22, as part of its re-examination of NTP's patent claims, the U.S. Patent And Trademark Office issued a final rejection of one of the five patents involved in the infringement suit. This move is expected to lead to the Patent Office's invalidation of all of the patents at issue in the legal dispute—which will leave RIM in the clear to operate normally without interruption to service.

So, once again, we are left in a "wait and see" holding pattern. Will we have to ween ourselves from our CrackBerries and find a new way to satisfy our communications cravings? Only time will tell.

Tablet PC Tips

by Tom Nelson and
Mary O'Connor



Put The Taskbar Where You Want It

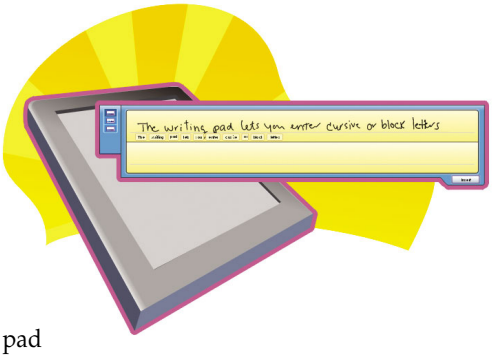
If you normally use a desktop or laptop PC, you are accustomed to having the Windows Taskbar at the bottom of the display. This arrangement works well in Landscape mode but not as well in Portrait mode.

To change the Taskbar's location, tap and hold an unused area of the Taskbar and then drag it to its target location. You can position the Taskbar along any edge of the screen.

After you move the Taskbar, you can adjust its size to let it display one or more rows of Taskbar icons. Move your pen to the edge of the Taskbar. When the pointer icon changes to a double-ended arrow, tap and drag the edge of the Taskbar to resize it.

When you're happy with the location and size of the Taskbar, you can adjust the individual toolbars in the Taskbar. For example, we made our Taskbar wide enough for three rows of icons. We reduced the size of the Quick Launch toolbar to create more room in the Taskbar's list of running programs, as well as room for any special toolbars. To adjust the size of a toolbar, move your pen to the edge of the toolbar. When the pointer turns into a double-ended arrow, tap and drag the edge of the toolbar to expand or reduce it.

Correct Text With The Input Panel



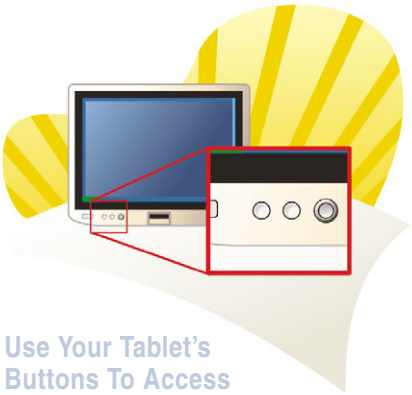
The Input Panel offers three text input options: the writing pad, the character pad, and the keyboard pad. We will concentrate on the first two methods because, for the most part, the keyboard pad mimics a standard keyboard.

The character pad lets you enter cursive or block letters, although you must enter letters individually. Making corrections is a simple matter of writing over the offending letter. Some letters are a bit more troublesome than others, such as upper- and lowercase versions of the letter "L." Often, the lowercase version will be interpreted as the uppercase version, or as the number one. If you are unable to make the correction by writing over the letter, let the stylus hover over the letter until a drop-down arrow appears. Tap the drop-down arrow for a list of suggested characters. Tap the appropriate character to make the correction.

The writing pad lets you enter cursive or block letters, although cursive is the standard. The writing pad interprets your handwriting and displays the words you have written. When the writing pad misinterprets a word, there are several ways to make a correction. If the writing pad misinterprets a single letter, you can simply write over the letter to correct it. If the writing pad still misinterprets the letter, you can try writing over it again. The area you're writing over will probably end up looking messy, but what's important is that the writing pad interprets the letter correctly.

If more than a single letter is incorrect, tap the version of the word that appears just below the writing line. This will open the correction pad, which breaks a word into separate letters and lets you enter individual characters, similar to the character pad. You can write over a letter or let the stylus hover above the letter until a drop-down menu arrow appears. Tap the arrow, and a list of suggested characters will appear. Tap the appropriate character to make the correction. You can also use the correction pad to insert or remove spaces. To remove a space, let the pen hover over the space until a drop-down menu arrow appears. Tap the arrow and then tap Delete. To add a space, let the pen hover over the character that will follow the inserted space until a drop-down menu arrow appears. Tap the arrow and then tap Insert Space. The inserted space will always precede the selected character. Tap OK when you are finished.

Another way to tackle a problem with a single letter is to try writing it in a different form. If you wrote the letter in cursive, try writing it as a block letter or vice versa.



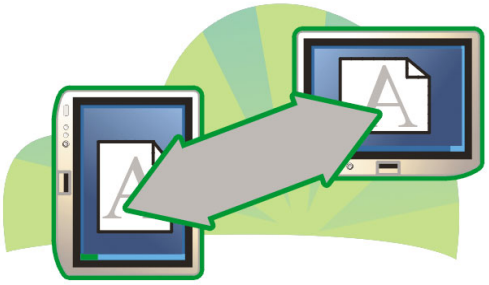
Use Your Tablet's Buttons To Access Applications

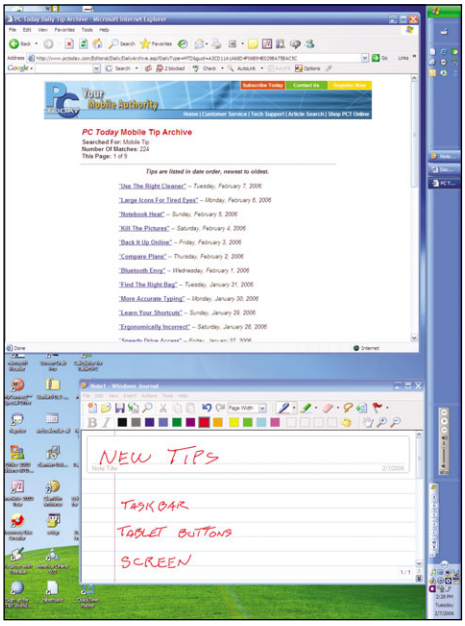
Tablet PCs include a series of buttons integrated into the display bezel. You can configure these buttons to perform many different functions, including launching applications, mimicking the pressing of keyboard sequences, accessing the Input panel, and navigation.

Tablet buttons can have different functions, depending on screen orientation. You can assign one function when the screen is in Landscape mode and another function when the screen is in Portrait mode. This is especially handy with convertible tablets, which can operate as a standard notebook or with the screen folded down into a tablet.

To change the function of a button, tap Start, Control Panel, and then Tablet And Pen Settings. Tap the Tablet Buttons tab and then tap the Buttons setting for a drop-down menu that lets you select the screen orientation you want to pair with a button's function.

The buttons you can change will display in a small window that shows each button's name and currently assigned function. Tap a button name and then tap Change. Tap the Action drop-down menu and select the function you want the button to perform. For this example, tap Launch An Application. A field for the Program Location will display with a Browse button. Tap the Browse button and navigate to the program's location. For this example select Internet Explorer, which is located at C:/PROGRAM FILES/INTERNET EXPLORER/IEXPLORE. After you select the application, tap OK. Tap OK again to return to the Tablet and Pen Settings window. Tap Apply to accept the new button configuration and then tap OK.





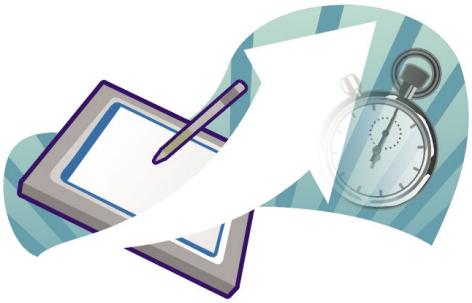
Quickly Change Screen Orientation

If you're like most individuals, you usually use your Tablet PC in Portrait mode. But not all applications lend themselves to this display orientation.

You can change screen orientation by tapping Start and then tapping the Tablet And Pen Settings Control Panel or by using a custom Orientation utility that many manufacturers include with their tablets. Either way, changing screen orientation is a multi-tap process.

A simpler, faster method is to use the Tablet And Pen Settings icon in the Notification tray. Tap the icon to bring up a small pop-up menu and then tap the Change Screen Orientation menu item.

Improve Your Tablet's Performance



The processors and graphics chips in Tablet PCs are called on to do a lot more work than the average notebook. If your tablet seems a bit slow in responding to your pen or mouse, try changing Windows XP's Performance options to reduce unnecessary screen effects.

Tap Start. Tap and hold the My Computer icon until the right mouse button icon displays. Select Properties from the pop-up menu. In the System Properties window, tap the Advanced tab. In the Performance area, tap the Settings button. In the Performance Options window, tap the Visual Effects tab. Remove the check marks next to all of the animation, slide, and fade effects. Leave the other effects checked for now. Click Apply and then use your tablet for a while to see how it performs under routine use. If performance still feels a bit sluggish, repeat the process and remove the check marks next to additional items in the Visual Effects list.

Gritwire

Free Web-Based RSS & Podcasts

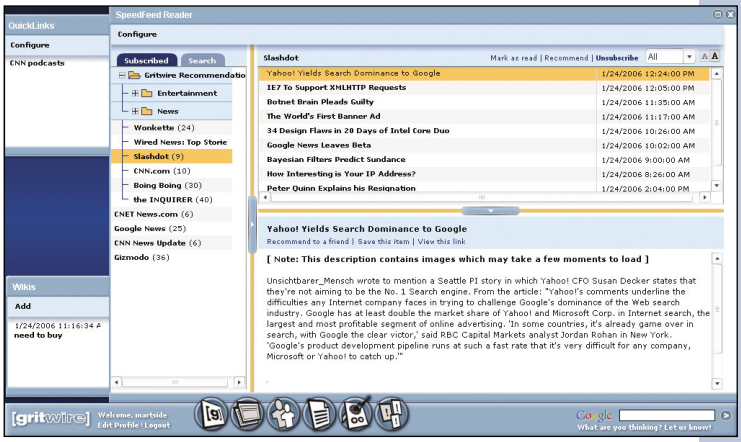
Gritwire (www.gritwire.com) is a free online aggregator for RSS (Really Simple Syndication) feeds and podcasts, accessible from any notebook or PC with Web access. There are no help files or tutorials, so it's aimed primarily at existing RSS users. To help such users switch, Gritwire can import existing lists of RSS feeds stored as OPML (Outline Processor Markup Language) files. Gritwire had only been around for about six weeks at this writing, and so its edges were still a little rough.

Basically, RSS aggregators pull headlines from Web sites that offer RSS feeds. Typical feeds provide news, blog entries, podcasts, and other periodically updated material. Each headline is hyperlinked to an article on the originating site, so you can click the items you want to read, hear, or view.

The SpeedFeed Reader is Gritwire's main panel, and it's where you'll find feeds and podcasts. Click a headline, and you'll sometimes see a preview of its linked content in the lower panel. The View This Link launches the item's URL. You can send links to other people, Gritwire users or not, and save items you don't want to disappear as new content pushes out old headlines. However, Gritwire doesn't offer a newspaper-style overview like that of FeedDemon (www.bradsoft.com/feeddemon), Pluck (www.pluck.com), and other similar programs. Also, you can only look at headlines from one feed at a time.

To add a feed, you can click Subscribe when you preview feeds you find with the Search tab's field. Otherwise, you generally have to copy and paste a URL in the Add RSS Feed item in the Configure menu. Not many sites carry Gritwire's "chickets," or branded RSS buttons that automatically add feeds to users' SpeedFeeds. (You can click the Gritwire logo at the lower left and then the Publishers tab for more info.)

You can drag and drop feeds in the SpeedFeed Reader's left column, but control is limited at this writing. For example, we wanted to move some of our feeds out of the Gritwire Recommendations folder, but the interface wouldn't allow us to do this. Dizpersion Technologies based Gritwire on Macromedia Flash 8, so like My Yahoo!, another free Web-based aggregator, its windows and scroll bars don't have quite the same immediate feel and functionality of an installed application.



We like Gritwire's power and Web accessibility, but its presentation could use some tweaking.

Unlike My Yahoo! there's no Directory to help you find new feeds by topic.

Podcasts seemed to work best when we added their feeds to the SpeedFeed Reader and launched them from there. The actual Podcasts icon at the bottom of the screen did not seem to load podcasts properly. The Wikis feature is also a little confusing until you realize that at Gritwire, Wikis are basically notes to yourself that you can share and collaborate on with Friends, meaning other Gritwire users you added to your Friends list. For instance, you can set up a grocery list that your spouse can add to from her or his Gritwire account during the day. You can tell Gritwire to send you an Alert message when a Friend changes a Wiki. Unfortunately, there currently is no easy way to print the contents of a Wiki without using the browser to print the page.

We found stray errors now and again, such as when we tried to Load More Items from Gritwire's official blog. Also, you can't copy text from certain windows. In short, Gritwire seems to be a work in progress. It's not easy for beginners to figure out, nor does it quite have the ease of use and overview feature power users want.

It's clear, however, that the developers are on the case. As the Gritwire blog states, "Going forward I'd like Gritwire to be driven more by user input, so please, any and all comments are appreciated."

by Marty Sems

GoodSync Pro

Update File Versions Among Your PCs & Storage Devices

Now available for download from Siber Systems, the creators of RoboForm, is GoodSync Pro 3.2.9 ($19.95, www.goodsync.com). Like a backup utility, GoodSync Pro (or, as the software calls itself, Good Sync) can synchronize files between computers, such as between your desktop and laptop, even over the Internet or a LAN (local-area network). This includes any files that might change, appear, or disappear, such as your Bookmarks/Favorites, personal documents, music files, and software installer files. You can't sync individual email messages from Outlook/Outlook Express, although you can sync entire PST email archive files from the programs.

GoodSync Pro can do a two-way sync process, so if a file is more recent on your USB flash drive, the program copies the file to your PC, and vice-versa. GoodSync Pro also does one-way syncing, meaning backups, just as easily.

To use the program you tell it which folders or files to compare with each other on both PCs or devices. After you save changes to a file on one drive/device or add new files to it, open GoodSync Pro and click Analyze. The software will immediately tell you the size and modified date of each file, graphically showing you which one was last changed. You can click Synchronize to make the latest versions the only versions extant. Of course, errors can happen, especially when one computer's clock is wrong, so GoodSync Pro lets you tell it which file version is the correct one, even if that file is listed as being older.

GoodSync Pro takes things a step further, also allowing syncs to removable storage media, such as USB flash drives, CD/DVD, and the like. There's little support for smartphones, PDAs, or music players unless Windows recognizes them as removable drives, but these types of devices already have shedloads of sync utilities available on the Web.

You can create different "jobs" to sync or back up different files and folders, and you can group several jobs to run all at once. Siber Systems says giant jobs can cause problems on systems with moderate amounts of RAM or less, so it's not a good idea to just make one big job syncing everything on your hard drive.

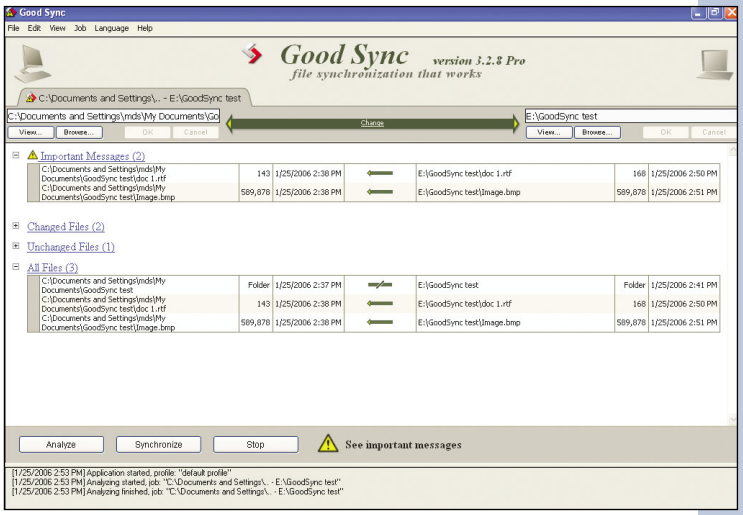
You can set GoodSync Pro to automatically sync at particular intervals or at events, such as every time you attach a removable storage device or log out of Windows. You can also link GoodSync to Windows' Task Scheduler for additional control. There are also all sorts of filters with which to include or exclude certain files and folders, such as by file type, file attributes, relative file path, and modification date. As an example you could exclude files that are too big from a sync job involving your 64MB USB flash drive. You can also set GoodSync Pro to check online automatically for updates.

We figured out how to use GoodSync in minutes thanks to the excellent Help file. There's more information on the site. Everything went well in our testing; any delays in getting syncs set up between PCs on a LAN and over the Web were things outside of GoodSync's purview, such as enabling file sharing and dealing with firewalls. Our experience wasn't difficult, but novice users might want to avoid tackling Internet transfers if they're not comfortable with the inevitable troubleshooting.

On the same topic, Siber Systems' Bradley Sowell says, "A user is also allowed to synchronize data with a remote computer (using a network drive) without obtaining a license for that computer. However, if a user wants to install GoodSync on that second computer, a second license is required."

GoodSync supports Windows 98/Me/2000/XP/Server 2003. The free version can sync up to a generous 20,000 files per month, whereas the Pro edition has no limit.

by Marty Sems



GoodSync Pro tells you which file is the latest, but you can correct the program.

by P. Bryan Edge-Salois

Mobile Games

Fun For Road Warriors

The availability and pricing of mobile games is generally dependent upon your service provider. Pricing typically starts around $2.99 but may include additional connect-time charges for downloading a game. In addition, some providers may offer a lower monthly subscription fee or a one-time purchase price for unlimited play. Finally, not all games are available from all providers for all handsets, so check with your service provider to learn exactly what games are available for your particular handset.

Diner Dash

Glu Mobile • www.glumobile.com

Diner Dash is a charming, clever strategy game adapted from a PC game of the same name. Taking the role of Flo (the entrepreneurial protagonist), your job is run a successful diner. Seat your customers, take their orders, deliver the check, and clear tables to provide a fast, pleasant dining experience. Make your customers happy to earn big tips, and maybe someday you'll get to open a whole chain of diners.

The premise is simple, but there's much more to Diner Dash than meets the eye. Your ultimate goal is to earn money by serving your customers well. Serve them poorly, and they'll walk out in a huff, costing you a lot of money. Some customers prefer certain seats to others, and different customers have different behavior patterns. Senior citizens, for example, are patient but tip poorly, while hurried professionals are impatient but tip big. Bonuses are also awarded when you chain actions together efficiently. For example, delivering the check to three tables consecutively, or picking up the dishes from three consecutive tables. As you accumulate cash, you can purchase upgrades for your restaurant, such as more tables or a radio to improve customer patience, to name a couple.

Diner Dash can be played as a single, endless shift or in a career mode, in which completing a series of shifts (levels) ultimately rewards you by unlocking new restaurant themes. Regardless of the mode you play, Diner Dash is an excellent blend of playability, replayability, addictiveness, and engaging strategy.

Brady Bunch Kung Fu

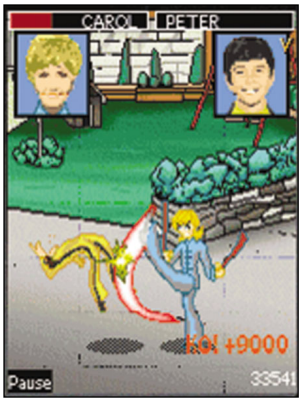
Mobliss • www.mobliss.com/products/games

Adding Kung Fu to just about anything is sure to make it interesting. In this case take the cheesy sitcom Brady family from the '70s, give them all bizarre fighting styles, and you've got one weird, albeit fun, mobile fighting game.

A malicious Hawaiian Tiki idol—reminiscent of the final episodes of the series—has granted all the members of "The Brady Bunch" bizarre kung-fu powers and compelled them to duke it out. Pick a Brady, defeat the others, find the idol, and lift the curse!

Each character has unique powers and kung-fu styles. Greg, for example, is a Disco inferno (who actually has some fire powers), Cindy uses weird mental powers to smack you around with her dolls, and Peter is a spitting image (complete with yellow jumpsuit) of Bruce Lee.

Graphically, Brady Bunch Kung Fu is bright and colorful. Just imagine Jan Brady rendered into the Street Fighter II arcade game, and you've got a good idea of the graphics. The game even plays some Brady Bunch music in between bouts for the truly nostalgic.



The fighting, unfortunately, is a bit shallow, heavily favoring simple button-mashing with little strategy. On the other hand, the game is goofy enough that just watching Cindy lay some smack down on Greg is entertainment in itself, so the lack of depth may not be missed—especially for those with a real Brady Bunch nostalgia mad-on. As it stands, you'll probably finish the game pretty quickly, but Brady Bunch Kung Fu is a weird, worthy fighting game, although head-to-head competition against live opponents is sorely missed. Marcia, Marcia, Marcia!

The Sims 2 Mobile Edition

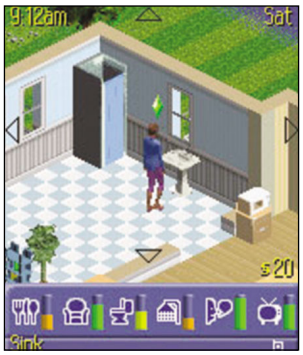
Electronic Arts • thesims2.ea.com/about/mobile

It was just a matter of time before the PC gaming juggernaut The Sims made its way to a handset. For the uninitiated, The Sims is essentially a game simulating real life—with a high degree of zaniness. The fun and challenge lies in guiding your Sim through the trials and tribulations of everyday life, eating, sleeping, socializing, achieving personal goals, working, and engaging in shameless consumerism by building bigger homes and stocking them with interesting stuff.

There are actually two versions of the The Sims 2 Mobile: the Unconnected Edition and the Connected Edition. The Connected Edition allows players of the PC version to upload custom Sims to a Web site (www.thesims2.com) and import them to their handset, as well as view any memories their Sim has generated and exchange your Sim's possessions. As if there wasn't enough on the Internet to waste your time.

The Unconnected version of the Sims 2 Mobile is essentially the same game without the Web site features of www.thesims2.com. It has far fewer custom Sims to choose from but otherwise plays much the same.

Both versions lose a fair bit of interactivity and flexibility relative to their PC counterparts, but this is not surprising considering the scope of the original game and the difficulty translating to a cell phone. Character interactions aren't quite as robust or interesting, and the sound and graphics are much more limited. You don't even get to hear your Sims speak their gobbledygook, known as Simlish. The mobile Sims just don't have as much personality as their PC counterparts.



Regardless, die-hard Sim fans will want to snap this game up without a second thought, and Sims 2 Mobile retains enough of the PC game's heritage to make it a worthy recommendation to anyone looking for some silly, "real life" casual gaming on their mobile phone.

WWE Smackdown!

THQ Wireless • www.thqwireless.com

WWE Smackdown! is a respectable professional wrestling game and a decent enough distraction for those waits at the dentist's office or in line to buy movie tickets. Smackdown features a small stable of WWE wrestlers, including Charlie Haas, Booker T, Bubba Ray Dudley, Rey Mysterio, D-Von Dudley, Kurt Angle, and John Cena. Play begins with John Cena; the others must be unlocked by defeating the game's tournament mode. Every wrestler consists of five characteristics: strength, submission, endurance, technique, and speed. You can also make a custom wrestler with these attributes.

Unfortunately, regardless of which wrestler you play, Smackdown largely boils down to tedious button smacking. Smack buttons until you enter a grapple with the opponent, smack them again to build power, and smack a button to execute a finishing move. Wash, rinse, repeat a few times, and then pin the opponent for the victory. The only real difference between characters is their finishing moves, but the secret to victory (button smacking) is pretty much the same regardless of who you're playing.

Graphically, the game looks pretty good on a small screen, and it's one of the better wrestling games out there. However, even the most die-hard WWE fan will likely tire of the game quickly, especially with no head-to-head play. Smackdown is best played in short bursts, or at least until someone releases a truly compelling professional wrestling game for the mobile platform. Maybe someone can snag the license for Partridge Family Extreme Cage Fighting.

The Chronicles Of Narnia

Disney Mobile Studios • mobile.disney.go.com

The Chronicles Of Narnia is a simple, entertaining fantasy turn-based strategy game. Don the shoes of Peter, Susan, Lucy, and Edmund Pevensie as they step through the Wardrobe and enter Narnia to do battle with a hoary host of Narnia baddies (including wolves, minotaurs, and ogres, to name a few) across 11 chapters to free Narnia from the evil Ice Queen.

Chronicles Of Narnia's 11 chapters consist mostly of combats broken up by some dialogue to tell the story and/or explain mission objectives. Combat is straightforward: You may choose to move, move and attack, attack twice, or defend in any given round, depending on how much energy a character has. Winning a battle earns experience points, which are spent on special cards that power up your characters. Every character can have up to three different cards at one time, selected from a total of 40 different cards.

Sadly, Narnia only offers about two hours of total game play with virtually no replay value. It's still a pretty good fantasy turn-based strategy game for the mobile platform, however, and likely to keep young Narnia fans entertained—if you don't mind them playing with your cell phone.

The Hot Spot

Your Guide To Wi-Fi

Christian Perry *is a long-time contributor to* Smart Computing *magazine and its sister publications, the* Smart Computing Learning Series *(no longer in print), and the* Smart Computing Reference Series. *Please send your feedback to* christian@pctoday.com.

Wi-Fi Phones On The Rise

If a recent study is any indication, you might be using VoWLAN (Voice over Wireless LAN) sooner than you think. According to Infonetics Research, the worldwide Wi-Fi phone market increased a whopping 76% between 2004 and 2005 to $102 million, and that figure could double in 2006.

Infonetics expects VoWLAN to grow impressively through 2009, when it sees Wi-Fi phone revenue reaching nearly $1.9 billion, as VoWLAN extends beyond the enterprise and becomes popular with consumers. The firm also sees potential for VoWLAN as part of a VoIP service bundled with broadband connections.

In other findings Infonetics revealed that Wi-Fi phone units grew 112% between 2004 and 2005 and will grow 158% in 2006. Further, while single-mode handsets account for most of today's Wi-Fi phone revenue, dual-mode handsets—which include cellular capabilities along with Wi-Fi—will account for most sales by 2009.

According to Gartner, about 20 different dual-mode phones will appear this year and should see sales of about 20 million units. Although most of these will come from Nokia, other manufacturers are also in the mix, including Sony Ericsson, Motorola, Research In Motion, Pam, and UTStarcom.

Traditional landline phone service providers are quite familiar with the potential of VoIP to cut into profits; according to Forrester, U.S. revenues could decline $240 million per year for every 1 million consumers who move to VoIP. Phone operators in Europe are trying to curtail the wholesale shift of consumers to VoIP by offering both landline and wireless services.

Seattle Library Goes Wireless

Want some Wi-Fi with your books? The Seattle Public Library recently unveiled free Wi-Fi at seven branches, including Ballard, Beacon Hill, Capitol Hill, Green Lake, Greenwood, North East, and Rainier Beach.

The Seattle Public Library has enlisted the beauty of free Wi-Fi to join its striking design.

The library imposes no time limit on the service, and no password is required. Simply launch a Web browser to establish a connection. However, if you run into trouble, you probably won't get much help, as the library claims that "library staff members are not able to provide technical assistance and the library cannot guarantee that patrons will be able to make a wireless connection."

MetroFi Offers Free Wi-Fi, Ads

When it comes to Wi-Fi, the more choices the better. For residents of Santa Clara, Cupertino, and parts of Sunnyvale, Calif., choosing a wireless broadband service is now particularly tricky because Wi-Fi provider MetroFi recently announced it was offering free service—with a catch.

The company's free Wi-Fi service is ad-supported, which means users will see a strip of advertising at the top of their browsers, but the service provides the same 1Mbps download and 256Kbps upload speed as the paid service. The paid service is actually still available (at $19.95 per month) and is ad-free. Indeed, the free model can serve as a primary Internet connection if you can

MetroFi now offers free, ad-supported Wi-Fi service in several California cities.

tolerate the ads, but if you can't, it can serve instead as an alternate connection that could come in handy when out in your back yard or milling about town.

"Our free network is available to you whether you've yet to set up an Internet connection or are currently using dial-up, cable modem, DSL, or satellite," explained MetroFi CEO and co-founder Chuck Haas in a release.

MetroFi's solution to free Wi-Fi varies from efforts currently underway in certain other cities around the country where the free service will be delivered without ads. However, the ad-supported model appears to be a viable, ongoing plan that will likely appear elsewhere; in fact, Google has also pitched the ad-supported Wi-Fi model in California. Wi-Fi networks cost plenty to install and maintain, so it will be interesting to see whether free models that don't deliver ads to end users can survive in the long run.

WiMAX To Face Old Competitor?

Although WiMAX, or 802.16, appears ready to represent the next generation of fixed wireless broadband, an old rival could be making a comeback. In January Qualcomm acquired Flarion Technologies, leading analysts to ponder whether the merger would stoke the fire under Flarion's 802.20 wireless broadband access technology.

"With the closing of Qualcomm's acquisition of Flarion, 802.20 may get a new lease on life," said ABI Research's senior analyst of wireless connectivity research, Philip Solis, in a release. "Qualcomm will almost certainly attempt to rally support from other industry participants, but many companies had abandoned 802.20 to support 802.16e."

Several years ago when 802.20 was in its infancy, Flarion and others involved with the standard claimed that it wasn't meant as a direct competitor to WiMAX. But the early similarities were undeniable, and while 802.20 didn't boast the same data transmission speeds and range that WiMAX did, it appeared more mobile. Experts expected WiMAX to hit the market first (which made sense, considering 802.20 trailed WiMAX by a couple of years), followed by 802.20, which could have eventually supplanted WiMAX or somehow coexisted.

However, with Intel pushing hard for WiMAX's success, 802.20 has taken a back seat, if not nearly disappeared. WiMAX products are already being officially certified with many more on the way, and companies and towns alike are already making way for the technology. But Flarion's acquisition could nonetheless impact the direction of WiMAX, particularly if Qualcomm decides to capture a particular segment of Wi-Fi use, such as wireless connections on trains and other commuter options.

by Christian Perry

The Yahoo! Plan

10 Steps To Online Organization

by Cal Clinchard

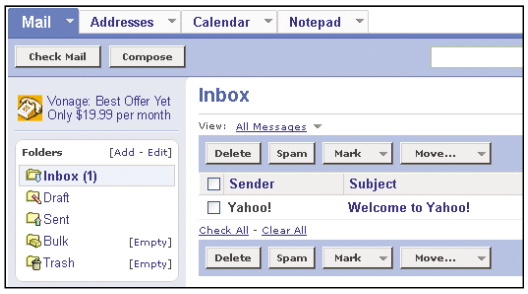
We who use the Web regularly have favorite haunts, as one would have a favorite neighborhood restaurant or shop. To the shock of Google lovers, Yahoo! devotees get through life just fine without relying on Google. And on the flip side, Googlers can be quick to dismiss Yahoo! as second-rate, offering more for the masses and less when it comes to serious search endeavors. This article is for those of you who haven't considered using Yahoo! for anything more than a spare email account, for those who don't know you can use one Yahoo! login to organize your day-to-day information, use news feeds, save Web pages for future reference, and store bookmarks, contacts, notes, and files.

Sign Up

To use Yahoo!'s services, start by getting a free Yahoo! Mail account. (If you already have one, skip to step 3.) Point your browser to www.yahoo.com, click the Mail icon, and click the Sign Up link. Complete the online form; required information includes your name, preferred regional content (the default is Yahoo! U.S., but you can choose Yahoo! Mexico, Yahoo! Canada In French, or other region with a Yahoo! presence), security question and answer, birthday, ZIP code, and, of course, a Yahoo! ID and password. If the service terms look agreeable to you, click the I Agree button, and you're on your way.

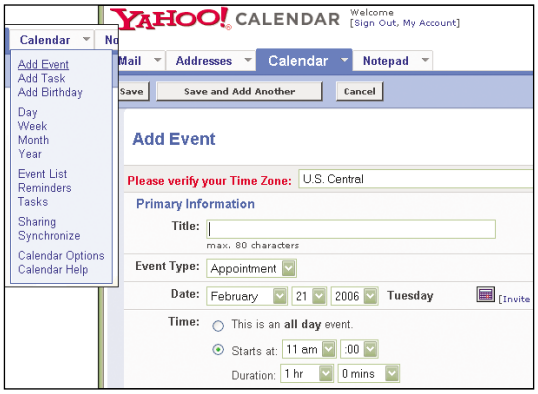
Email Away

Rather than bore you with Yahoo! Mail basics, let's look at some special features. If you want to access your account through a Web-capable mobile phone, click the Mail For Mobile link and use the drop-down boxes to determine whether and how you can use the service. To start organizing email, find the Folders box on the main Yahoo! Mail page, click Add, and name the folder. Click the Options link at the top right and then click Filter to automatically sort messages; other Mail Options page preferences include creating an email signature and blocking unwanted incoming email addresses.



Import Your Contacts

If you can access your contacts through Microsoft Outlook 97/98/2000 or Outlook Express, Palm Desktop, or Netscape Mail, you can import those contacts into your Yahoo! Address Book. Whichever application stores your contacts, use it to export into a single file (CSV for Outlook, ABA for Palm Desktop, and LDIF for Netscape). Then on the Yahoo! Mail page, click the Addresses down arrow and the Addresses Option link. Click the Import/Export link located on the left under Management. Under Import choose the file type for import, click the Browse button to locate and select the file, and click Import Now.

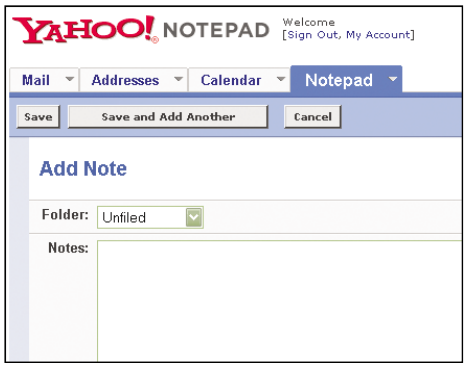


Make Plans

As soon as you get a Yahoo! ID, you automatically have access to all sorts of services, including the Yahoo! Calendar (calendar.mail.yahoo.com). Start adding events and tasks by clicking the aptly named Add Event and Add Task buttons and filling in the appropriate fields to indicate dates, times, reminders, notes, and other facts associated with each event or task. It's all pretty straightforward, so here are a couple of time-saving hints: To view a Monday-through-Sunday week, first select the Monday and then click Week (otherwise your Week view starts on whatever day was selected before clicking Week); when adding an event, skip the drop-down boxes for dates and times and click the thumbnail calendar view.

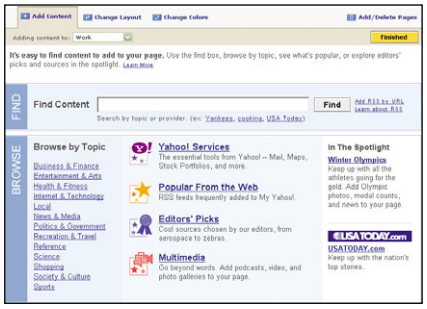
Save Little Things

So you're logged in and you need to jot something down, but you'd like your note to be accessible from anywhere. You could write it down, or you could click the Notepad down arrow, New Note, and type your note. The note will then, of course, be available to wherever there's a computer with Internet access. Click the Notepad down arrow and Add Folder to start organizing notes in folders. Click the Sync button if you'd like to use Intellisync for Yahoo! to synchronize your Yahoo! notes (or calendar or address book, for that matter) with Outlook, Outlook Express, a Palm or Pocket PC device, Lotus Organizer, or ACT!



Save Big Things

It sometimes happens that there's a file on one PC that you want to have accessible on another PC, or a file you want to be able to access via the Web while you're on the road. Whether the file is a small document, a large PowerPoint file, a collection of images, or anything else, you can do this with Yahoo! Briefcase (briefcase.yahoo.com). The catch is that the total space allotment is limited to 30MB. It's easy to use, though; you only have to type a garbled word for security purposes and click the Submit button to start using Yahoo! Briefcase, and its folder system is intuitive.

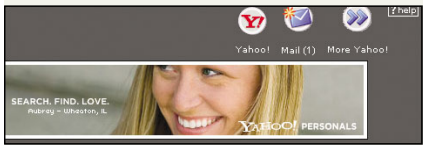


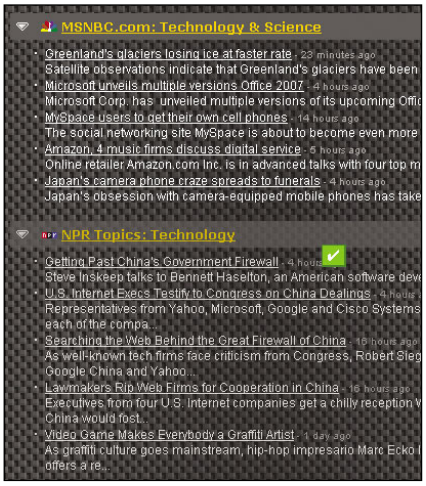
Stay On Top Of The News

My Yahoo! holds your bookmarks, news feeds, and other stuff both useful (weather, package tracking) and fun (TV guide, comics). Go to my.yahoo.com, log in, indicate your interests, and click Save. After your page is established, click Add Content and select one of the topics under Browse (Popular From The Web is actually worth checking out) or type anything you're interested in into the Find Content field and click Find. Also keep a lookout, when surfing, for the little "+ My Y!" button (often beside an orange RSS or XML button); click it to instantly add the associated news feed to your My Yahoo! page.

Yahoo!'s Edge

Trying to determine whether Yahoo! or Google offers the better portal strategy is like determining whether a pineapple or a tomato is the better food. Whereas Google plays the oddball genius, coming up with cool applications such as Gmail and Picasa, Yahoo! banks on the power of community to propel search in more user-friendly directions. Despite Google's media prominence, Yahoo! is still the world's No.1 portal. And with new acquisitions such as del.icio.us and Flickr, its broad user base will grow without having to step foot out from under the Yahoo! umbrella.





Make Yourself At Home

It's easy to spend a lot of time using My Yahoo! once you start adding all of your favorite sites and news feeds to it. As you add more content, consider creating multiple My Yahoo! pages (perhaps one for work and one for downtime diversions); to do this, click the Add New Page link. You can also click the Change Colors link for new designs and color schemes. The Change Layout link lets you rearrange your content, but we appreciate a recent change that lets you drag and drop items on a page (as illustrated at left); each module's Edit link offers other useful items that will save you from using the time-consuming Change Layout page.

Never Lose A Web Page

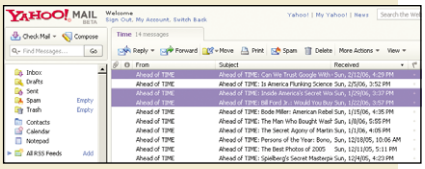
The simplest way to upload your bookmarks is to go to your My Yahoo! page, click Add Content, Yahoo! Services, and the Add button next to Bookmarks; this provides instructions for uploading your browser's bookmarks (aka Favorites in Internet Explorer), adding new ones, and organizing them in folders. But if you'd like the immense power of saving actual cached copies of Web pages for future reference, try My Web 2.0 Beta at myweb2.search.yahoo.com. If you've seen this service previously, you likely noticed its folder-based organization. Recent improvements, however, include the ability to assign multiple tags to saved pages.

Try The Delicious Side Dishes

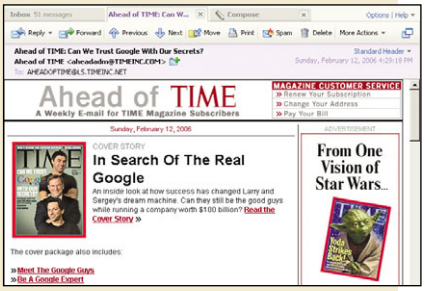
In the past few months, Yahoo! has gobbled up numerous sites, including event-planning site Upcoming.org, playlist-organizing site Webjay, and mobile data-sync company VerdiSoft, among others. But two of Yahoo!'s more interesting acquisitions are Flickr (www.flickr.com) and Del.icio.us (http://del.icio.us). Both sites are for sharing (Flickr for uploading digital photos, Del.icio.us for saving favorite Web pages), and both are heavily reliant on tagging. That is, when you save an item on one of these sites, you include a word or description so that you (and others) can more easily retrieve it, and users can discover related information (and common interests) based on tag searches.

The New Yahoo! Mail, Now In Beta

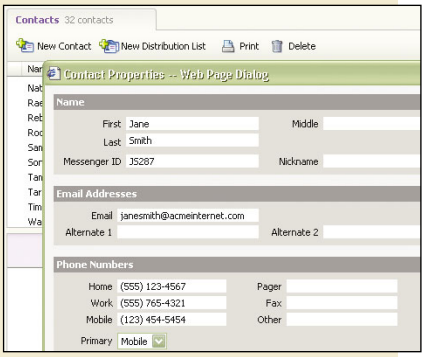
Whether you already know and love Yahoo! Mail or you've just set up a new account, the newer version, Yahoo! Mail Beta, is well worth trying. Go to whatsnew.mail.yahoo.com and click the link to get on the waiting list.



Compare the illustration for step 2, "Email Away," with this one. Yahoo! Mail Beta looks and acts more like a desktop email client, including DELETE-key deletion and drag-and-drop functionality.



Notice the tabs in the illustration above. With Yahoo! Mail Beta, you can keep a message open in one tab and compose a message in another.



Yahoo! Mail Beta also offers many cosmetic improvements over its predecessor, including a nicer-looking and more compact space for maintaining contacts.

Palm Treo 700w

Up Close & Personal

Palm hardware and the Windows Mobile operating system come together to create the Treo 700w.

Peanut butter and chocolate. Red vines and Mr. Pibb. The flute and heavy metal. There are some combinations that, as odd as they might sound together, just plain rock, as proven by Reeses, "Saturday Night Live," and Jethro Tull. And if you'd asked anyone five years ago (or even one year ago) if they thought they'd ever seen Windows Mobile running on a Palm device, they'd have probably looked at you like you were crazy.

Well, it has happened. The new Palm Treo 700w with Windows Mobile has hit the streets, and the reaction from users is one that usually accompanies such introductions of brilliance into our society: At first they're timid, apprehensive, and approach with caution. But the second they try it out themselves, nothing short of a pry bar can get it out of their hands.

Where Do You Want To Go Today?

The very first feature worth discussing is the very first feature you encounter upon turning on the 700w: the Windows Mobile Today screen. This is pretty much the central hub of all activity that takes place on the 700w. It's difficult to run down the list of available features on the Today screen, since you can customize it to include whatever features you want, in whatever order you desire (which, of course, is its greatest feature). We can, however, detail for you some of the major highlights.

The first area of note is the "speed dial" field, by default the active field on the screen whenever you pick up your device. All you have to do is start typing (numbers or letters), and the field will automatically find all corresponding matches for whatever you have typed in. If you begin by typing the *F* key, it will begin sorting the list by all last names that begin with "F," then by all first names that begin with "F." By then typing the *A* key, you will start to see entries drop away, leaving "FA"-beginning words such as the Farinas and Fairburns in your list.

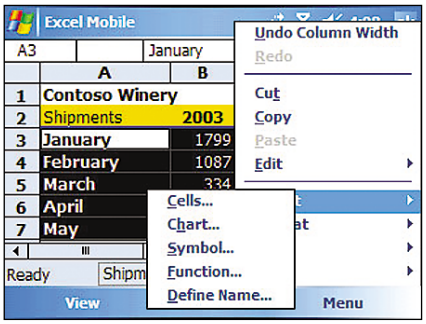
For those special contacts in your address book that you want to be able to dial with a single button (or with a single tap on the screen), you can set up picture- or text-dials just below the "speed dial" field. You choose a contact's number, choose a picture (or a key on the keypad) to assign to them, and press the OK button. Right there on your Today screen you will see the new speed dial button. What's more, if you need to reach that contact at a different number (or via text message or email), you can tap and hold over the button with your stylus to bring up a context menu that provides all of that contact's available numbers and email addresses.

In addition to speed-dialing phone numbers, you can also quickly perform Internet searches from the Today screen via the Web Search field. Simply type your search keywords, press the OK button, and your Treo will connect to the 'Net to perform the search. It operates similarly for instant messaging if you enable the Windows Messenger field on your Today screen. Your daily appointments, open tasks, unread email, unread text messages, and waiting voicemails

are also available, providing one-tap access to any of the waiting items that require your immediate attention.

At the bottom of the screen is the Messaging menu. This menu provides one-touch access to all voicemails, text messages, Outlook emails, and POP3 emails that you have received. You can also set the 700w to automatically connect to the Internet and download new email at regular intervals, both from an Outlook Exchange account and from Web-based POP3 mail accounts. Whenever new messages of any sort arrive, the item labeled Messaging will change to read Notification, letting you know that you have new items to attend to. All in all, the Windows Mobile Today screen combined with the Treo's layout and design makes for an extremely powerful and accessible device.

Thanks to Verizon Wireless's EVDO (Evolution-Data Optimized) network, downloads over the Internet are faster than they have ever been.



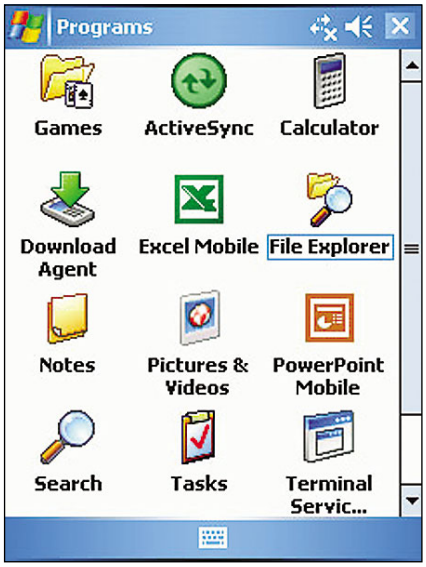
Microsoft Office documents run with little to no hesitation on the Treo 700w. Even complex formulas in Excel run quickly.

Moving Past Today

The Today screen certainly isn't the only way to access applications, appointments, or the address book. Situated very conspicuously to the left of the 700w's five-way navigation button is a key that all Windows users are familiar with: the Start menu. Push the Windows key next to the word Start, no matter what application you're currently using, to bring up the Windows Mobile Start Menu. From here you'll find a very familiar menu of applications and folders that offer instant access to all of the functionality within your Treo 700w.

Like the Today screen, you can customize your Start Menu to show the programs that you need or want immediate access to. The camera application, games, calendar, contacts, instant messaging, and media players can all be made to appear in the Start Menu. You can add up to seven items in all; all other program icons appear under the Programs folder, also available via the Start menu. In addition, there is a row of quick-launch icons that appears at the top of the Start menu; these icons indicate the last six accessed applications that don't already appear in the Start menu, providing thirteen easily accessible application icons.

There is a plethora of preinstalled applications on the Treo 700w that make it an instantly accessible business tool, including Microsoft's Word Mobile, Excel Mobile, PowerPoint Mobile, and Outlook Mobile. The document support present in these mobile editions of the Office tools you're already familiar with is unbelievable: Embedded images and sound, formatting, and formulas all work without any sort of conversion or loss of quality. The best part is that Outlook on your PC synchronizes natively with Outlook on the Treo 700w. So say goodbye to buying expensive third-party programs just to mirror the folder structure and appointment features you're used to in your Outlook.



The Programs screen offers all of the apps currently installed on your Treo 700w, both on the device and on the storage card.

The 700w's media playback abilities are fantastic. This is the first smartphone to support MP3 and WMA audio right out of the box, not to mention video in MPEG and WMA formats, without requiring any third-party application support. Simply dump some music into your Treo's My Music folder (or onto your SD [secure digital] memory card), start Windows Media Player, and play your file. The audio comes across very crisp for a smartphone, and the video appears quite lively on the 16-bit 240 x 240 color screen. The prospect of watching a missed episode of "The Office" on a smartphone is suddenly not so unbearable.

The camera included on the Treo 700w is immensely better than any of the cameras featured on the previous Treo models. It shoots at 1.3 megapixels and, for the very first time, allows for greater than 2 pixel-per-inch resolution for images. This means you can print these pictures on a photo printer at a decent size without seeing wavy lines and artifacts all over the image.

There are actually quite a few options you can change in the Camera application. Brightness ranges can be adjusted from +3 to -3; the resolution of the image can be changed from as large as 1,280 x 1,024 (best quality, larger file) all the way

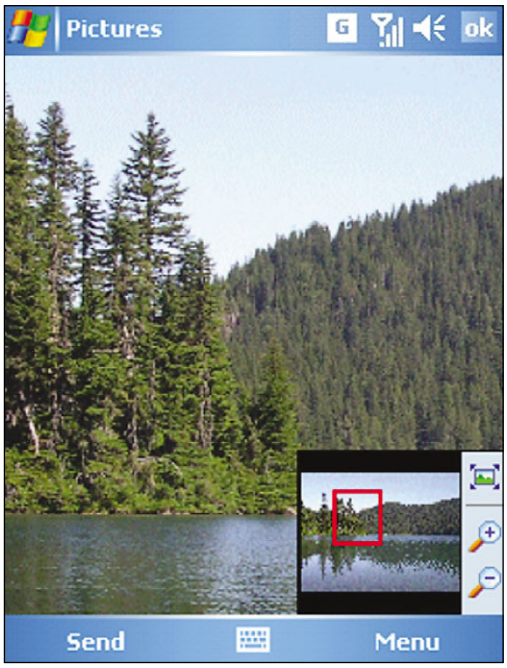
down to as small as 160 x 120 (smallest file size, very poor image quality). Like the Treo 650, you can zoom up to 2X with the camera, but it's a digital zoom, so sudden movements or subtle changes in light during exposure will severely affect the quality of the image while zoomed in. For the video capture mode, you can adjust the brightness like in still image mode. You cannot zoom in, however, and the resolution of videos can only be set to either 176 x 144 or 352 x 288. Still, this is a rather dramatic improvement over the previous Treo designs. And it should be noted that both images and video can be stored either on the device or directly onto the expandable SD memory card.

Under The Hood

What's really astounding is the speed at which all of the applications run. Thanks to the Intel XScale 312MHz processor running under the Treo's hood, everything you ask the Treo to do is done with little to no hesitation. All documents are opened and presented with speeds that are somewhat reminiscent of the most powerful PDA devices, thus bridging the wide gap between smartphones and PDAs. We were able to open a 1MB Word file with embedded audio and clip art in less than 10 seconds; that's just slightly more time than it would take to open on a PC!

Quite possibly the most notable upgrade in speed comes on the EVDO (Evolution Data Optimized) network, provided for the 700w by Verizon Wireless (the only 700w carrier at the time of this writing). Actually connecting to the Internet is a somewhat different experience for those not used to seeing a window stating that the phone is dialing a number and takes approximately as long as any other Internet-enabled phone. Once connected, however, things fly over the 'Net with lightning speed.

During our tests while connected to the EVDO network, emails with attachments around 500KB would send and receive in just under four seconds, and 1MB attachments would send in just under seven seconds. Instant Message conversations took place with absolutely no lag (and thanks to the Treo keyboard, typing was a breeze). The Pocket Internet Explorer browser renders most Web pages quite well, even those not designed for tiny screens. And downloading applications and files directly over the Internet was quick and painless.



The camera on the Treo 700w is a gigantic leap forward for the Treo series, sporting a 1.3-megapixel camera with 2X zoom.

Last But Not Least: The Phone

Of course, we cannot forget to mention the most important aspect of this Smartphone: the phone itself. It's one thing to say that the quality of the phone calls is good "for a smartphone." But we will go on record as saying that the Treo 700w sports one of the clearest-sounding phones we've ever heard. The directional microphone in the mouthpiece does a better-than-sufficient job of picking up voices that are speaking into it while filtering out ambient noise. We were able to hear a caller sitting in a car with the radio playing very clearly without even noticing Jethro Tull's heavy-metal flute in the background.

Palm Treo 700w Specifications

Here's a quick rundown of what's inside the Palm Treo 700w from Verizon Wireless.

Processor: Intel XScale 312MHz

Operating System: Windows Mobile 5.0.2 (Pocket PC Phone Edition)

Memory: 128MB onboard, expandable to 4GB via SD (secure digital) storage card

Wireless: 800/1,900MHz CDMA; EVDO (Evolution Data Optimized) network

Screen: 240 x 240 color TFT touch-screen display, 16-bit, 65,000+ colors

Camera: 1.3 megapixels with 1,280 x 1,024 resolution

Audio: 2.5mm headset jack and speakerphone

Bluetooth: Bluetooth 1.2 wireless support

Setting ring options for various types of calls is probably the best hidden surprise we encountered with this phone. There are many options available, including steady-volume ring, rising-volume ring (which starts off low and progressively gets louder), vibrate, pulse-vibrate, or a blend of all three. The Treo 700w also supports MP3-native ringtones and video ringers as well, allowing any song or video clip to play when certain contacts call.

It's a historical landmark when two amazing things come together to form something greater than the sum of their parts. The hardware design of the amazing Treo combined with the Windows Mobile operating system makes for a truly remarkable device, one which will fundamentally change the way that smartphones are viewed and used in business as well as society.

by Joe Peacock

Don't Just Snap Photos

Open Your Eyes To Two Intriguing Online Services

If you have a digital camera, you've probably started snapping photos of just about everyone and everything. The Web offers a plethora of photo-sharing sites that can help you show off your digital masterpieces. Flickr.com and Riya.com each take a unique approach to the photo-sharing phenomenon, and both let you sample their services free of charge.

Flickr

Put Your Photos On The Web

Flickr (www.flickr.com) takes the concept of a photo-sharing site and kicks it up a notch with an emphasis on sharing your works with the general public. Flickr is also unique for its distinctly blog-like structure. That's not to say Flickr (still in its beta form) is lacking features. On the contrary, Flickr lets registered users do a lot more than just post photos. Once you set up a free account, you can upload pictures from your camera phone; create and join public or private groups to share your photos with your friends, family, and like-minded shutterbugs; organize your pictures with text tags; and search for similar photos with matching tags. You can also take advantage of professional printing and replication services, which let you create your own calendars, posters, books, and PhotoShow DVDs.

The first time you visit Flickr.com you'll see a large photo in the upper-left corner and a Sign Up Now button on the right. The home page also introduces you to one of Flickr's more unique features: tags. Tags are Flickr's way of helping you organize and categorize your images, both for your personal use and for viewing by other visitors to the site.

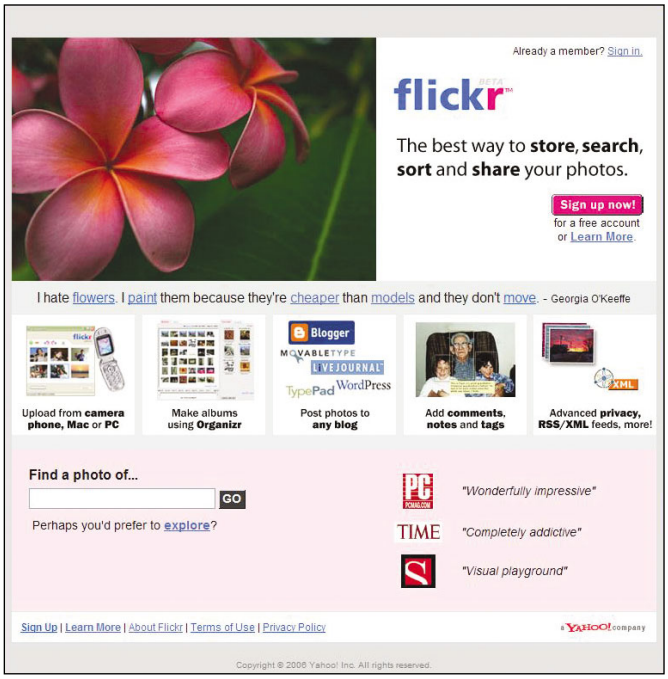
The lower-left corner of the home page features a search box that lets you browse Flickr's vast collection of tagged photos. Click the Explore link below the search box to view some of Flickr's more interesting images. Flickr keeps track of the number of times a particular image gets clicked, how many people comment on the image, and a variety of other factors that contribute to the photo's overall intrigue.

Sign up. To register for a free Flickr account, click the Sign Up Now button from the home page or click the Sign Up link from the upper-left corner of any Flickr page. Flickr is a Yahoo! site, which means you're ahead of the game if you have an existing Yahoo! ID. Simply enter your Yahoo! ID and password in the fields to the right or click the Sign Up link in the Don't Have A Yahoo! ID box. When you create a Yahoo! ID, enter your personal information in the appropriate fields, create a password and a unique Yahoo! ID, choose a security question, and read the Yahoo! Terms Of Service at the bottom of the page. Click I Agree to continue.

Once signed in, you'll see the Welcome Back page, which lets you activate a new Flickr account or merge an existing Flickr account with your Yahoo! ID. To activate a new account, simply enter your desired Flickr screen name and then click Sign In. The next page displays some of Flickr's more recent images to get you inspired. To the right you'll find a link to your personal Flickr home page, as well as links for

learning more about uploading photos, creating your profile, and exploring Flickr.

Your Flickr home page is a bit sparse when you first start out, so click Create Your Flickr Profile to personalize your virtual photo studio. The Edit Your Profile page asks for your name, timezone, gender, birthdate, relationship status, and a short description of yourself. You can also add your Instant Messenger handle, Web site address, occupation, hometown, current place of residence, and your country. The Things You Like section asks for your Interests, Favorite Books & Authors, Favorite Movies, Stars & Directors, and Favorite Music & Artists. Click Save It to finish updating your profile.



The Flickr home page lets you access a wealth of digital masterpieces from users just like you.

Post your photos. Your home page displays your Flickr screen name, your profile information, and the photos you've currently uploaded. Flickr offers a variety of methods for uploading photos. To get started right away, simply click the Upload Photos link on the right side of your profile page. Here you'll see several boxes that let you upload up to six photos at a time. Click Browse, find an image on your computer, click it, and then click Open. Next, you can add tags for all the images and designate the privacy settings (Private or Public). Click Upload to post the photos to your Flickr account. You can add tags, titles, and descriptions immediately after uploading or later on.

To see the tools available for uploading your photos, click the Tools link that follows the Upload Photos link on your profile page. This page provides instructions for downloading and installing the Flickr Uploader (Windows, Mac OSWi) and the Send To Flickr executable, which lets you upload photos directly from Windows Explorer in Windows XP.

Free loader. The Upload Photos Page also tracks your upload throughput on a month-by-month basis. Users of the free Flickr account are limited to 20MB per month. This is a reflection of bandwidth, not storage space. If you don't need high-resolution images, then upload lower-resolution images to make the most of your monthly limit. The free account also limits you to three photosets, only the most recent 200 images viewable in your Photostream (a history of the images you have uploaded to Flickr), and the ability to store only small copies of your images.

Pay load. You can upgrade to a Pro account for $24.95 per year ($47.99 for two years) and get loads of extras. Your monthly bandwidth limit is bumped up to 2GB and you get unlimited permanent high-resolution photo storage, unlimited photosets, and ad-free browsing.

by Andrew Leibman

Riya

The Compulsive Organizer

Riya (www.riya.com) is much more than a snap-and-upload photo-sharing site. Riya features a highly-sophisticated search and tagging technology designed to help you organize and share your photos, your friends' and family's photos, and other photos from Riya.com. The search engine uses facial- and text-recognition technology to look at each photo and categorize it based on the person or text that appears within the photo.

How it works. When scanning for text, Riya uses OCR (Optical Character Recognition) technology to scan your photos for shapes that might be letters and then checks the recognized letters against a specialized dictionary. If you upload a picture of Fred wearing his nametag, then Riya will read the name tag and offer to tag the photo with Fred's name. Making a software program recognize your face isn't exactly as easy as taking it out for a night on the town. When you upload a picture of someone to your Riya account, the facial recognition software automatically detects the face regardless of the

lighting in the photo, the subject's age, facial expression, and whether the subject is wearing glasses, has makeup on, or has facial hair. For a more detailed explanation of Riya's facial recognition, visit www.riya.com/historyFaceRecognition.

Before you've trained the software to recognize faces, however, you'll have to click the Down arrow and enter the person's name into the Who Is This box. Although the technology is improving, Riya can only recognize a face if both eyes appear in the photo. Clothing is also helpful when identifying individuals in photos, so extreme close-up images don't work as well.

Riya's technology is very identity-dependent. In an Internet age where 6 billion people have the potential to interact on some level, names aren't unique enough, social security numbers present a privacy risk, and nicknames or aliases are easily changed and forgotten. Riya's solution is email. If you want photos in your collection to get categorized, then the name that is associated with a given picture must be linked to an email address. Riya's FAQ admits that this is a drawback, as many people who appear in your photos may not have email addresses. To get around the problem, Riya suggests you either establish your baby's first email address and get Grandma online or just leave those photos untagged.

Sign up. As we went to press, Riya was about to begin its beta-testing phase, during which you can only register an account if a current Riya user sends you an invite. Beta testing may be complete by the time you read this, in which case you can visit the site and click Sign Up from the upper-right corner of any Riya page. Although we couldn't access the fields on the Create An Account page, we did note that it asks for your full name, a valid email address, and a password. Barring any changes, all you have to do is fill the fields, check the boxes to indicate that you've read the User Agreement, and then click Register.

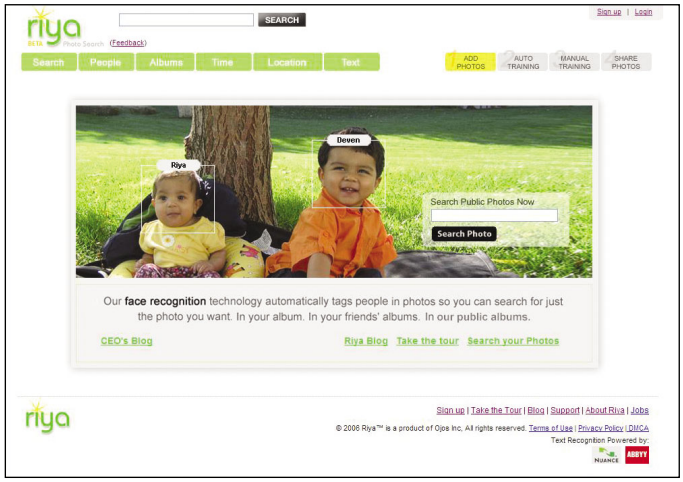
Saving faces. Once you've got your photos uploaded, the next task is to create or import training sets, or name tags linked to specific photos of people. There are multiple ways to teach Riya to recognize your photos, most of which start with the Auto and Manual Training tabs at the top-right corner of any Riya page.

Click Auto Training, select your Web email account, enter your email address and password, and then click Import Contacts to scan your email contacts for people who are already signed up with Riya. If your contacts already have Riya profiles, then any training sets they've established will be imported to your account. This way, your Riya account automatically recognizes the photos of mutual friends and family. You can also use the Auto Training page to search Riya's database for shared contacts that are already recognized by another Riya user's account.

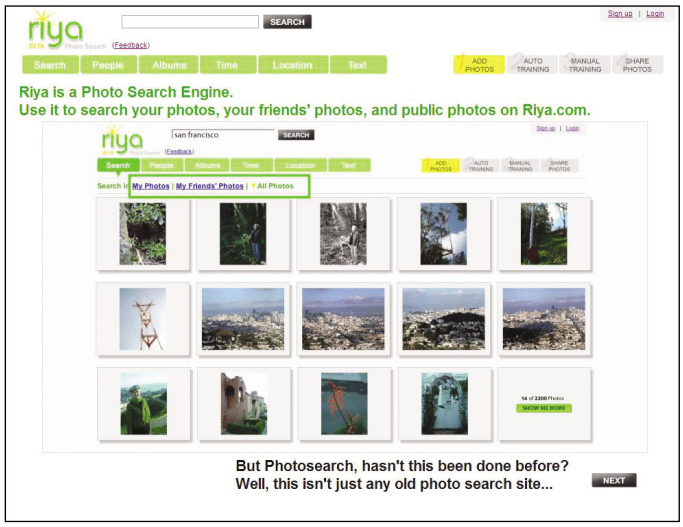
Clicking the Manual Training tab lets you choose between Simple Training and Bulk Training. Simple Training lets you drag and drop photos to existing tags. For instance, if you recently uploaded several photos of your nephew's first football game but have already tagged at least one other photo with his name, then simply drag his photos to his name from the list of tags on the left side of the page. You can also drag and drop the tags themselves to the associated photos. The Bulk Training link lets you tag photos that Riya thinks feature the same person or text.

After Riya's auto-tagging technology scans your photos to add tags, you'll see the results page that lists your photos in three categories: Definitely A Match, Maybe A Match, and Not A Match. If you notice that Riya has confused your star quarterback nephew with Great-Aunt Marilyn, then simply click the offending image to remove it from the set of tagged pictures. When you're done, you can browse all the pictures on your account using the buttons on the main page, including Search, People, Albums, Time, Location, and Text.

by Andrew Leibman



Riya's homepage lets you instantly search public photos.



Click Take The Tour from the bottom of the page to get a feel for Riya.

Dave Methvin *is chief technology officer of PC Pitstop, a free site that automatically diagnoses and fixes common PC problems. Contact Dave at* **dave@pctoday.com**

The Well-Tuned PC

Disk Hygiene

A PC's disk drive is a pretty unique component of most systems nowadays. It's about the only part that always has to be in physical motion whenever you're using the system. Drives spin pretty fast—from 5,400 to 10,000 revolutions per minute—but even at that speed they usually end up being one of the slowest components in the system. Regular disk tune-ups can make a big difference in system performance.

Golden Performance Rule

This one rule tells you everything you need to know about why good disk hygiene is so important: The more data that is on a drive, the slower it will be.

When a drive is nearly empty, it is at its fastest. The drive's read/write heads hardly have to move at all to reach any file, and even the empty space is close at hand when Windows needs to create a new file. As the drive fills, though, the disk read/write heads have to move longer and longer distances; that takes more time and makes the system slower.

Similarly, as the drive begins to fill up, it becomes harder for Windows to find a place to put new files. Quite often, Windows will end up splitting a file into pieces and putting those pieces in the holes left by files that were deleted. This is called fragmentation, and it's a real performance buzzkill, as well.

The "full drives are slower"rule should also guide your decisions about how large a drive to buy for a new system. If you put 75GB of files on a 100GB drive, it will usually be slower than if you put that same 75GB of on a 200GB drive. Bigger drives often have more platters, more read/write heads, and higher bit densities, all of which help the drive's performance.

For these reasons, I like to keep an active disk drive no more than half full. By "active disk drive" I mean one that has frequent reads, writes, and file changes. Nearly everyone's system C: drive fits that description. If you have a drive that is only used for archival purposes or is otherwise changed infrequently, for example your backups or music collection, those drives can be filled up without as much concern for performance.

Disk Drainage

Windows 98/Me/XP all have a Disk Cleanup utility that can help you identify and remove unneeded files. Generally, these include files in the Recycle Bin, Internet cache, and temporary file directories. To access it click Start, Programs, Accessories, System Files, and Disk Cleanup. The WinXP version has a bug that may often cause it to hang at the Compress Old Files analysis. If you ever experience that problem, see this Microsoft document: support.microsoft.com/?id=812248. Even if you don't have the problem, I don't recommend checking the box next to Compress Old Files option; it is never activated by default.

Although Disk Cleanup empties the Recycle Bin, you may also want to look into the amount of space used for files that you delete. By default, Recycle Bin uses 10% of the drive for deleted files, up to a maximum of 4GB. Windows will quietly give back that space if you run out of free space on the drive, but if your drive gets that full, you have a lot more to worry about. The main problem with having so much space used by the Recycle Bin is that those junk files fill up the drive and make it slower. On today's massive drives, a smaller Recycle Bin size can prevent junk file accumulation. For example, on a 100GB drive, even 1% will give you a generous 1GB of room for recycled files. To change the setting, right-click the Recycle Bin icon and select Properties.

WinXP's System Restore option also uses disk space to save your restore points. By default it uses 12% of the drive and keeps restore points for up to 90 days. Again, given the size of today's drives, that's just crazy. On my system, most restore points are less than 100MB, and a

Utility Of The Month: Contig & PageDefrag

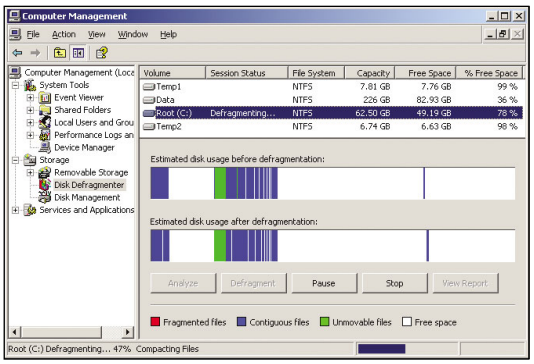
Mark Russinovich (lately of Sony Rootkit fame) has two great utilities that can help with disk fragmentation. His Contig program (www.sysinternals.com/Utilities/Contig.html) can defragment specific files by name or just show you whether a particular file is fragmented. This is a great tool to use when you just want to quickly defrag one or two files without taking the time to do the whole drive. It's a command-line utility, which makes it perfect for use in a scheduled task.

The PageDefrag tool (www.sysinternals.com/Utilities/PageDefrag.html) lets you defragment system files that the standard WinXP defragger can't touch. This includes paging files, Registry hives, and event logs. It does this by performing the operation at boot time, before Windows opens the files.

System Restore size of 1.6GB provides a generous three weeks worth of restore points. The defaults used more than 7GB! Like the Recycle Bin, the disk space used by System Restore is automatically given back if you end up running low on disk space. But again, if you're that low on space, it's already a pretty dire storage situation. To change the space used by System Restore, go to the Control Panel, double-click System, and then click the System Restore tab. Select the drive you want to change (the C: drive) and click the Settings button.

Don't forget to check the Add/Remove Programs dialog every once in a while to throw out programs that you no longer use. That's particularly important for games, which often drop a CD or two full of files onto the drive. If those files are no longer used, they're just taking up space, and the read/write heads have to skip over them hundreds of times a day.

Finally, don't forget to back up your important files. The moving parts on disk drives are subject to wear, and they often don't give much warning when they fail. Most disk drives only carry a one-year warranty, which tells you something about the manufacturer's confidence in how long they will last. At the very least, make a pledge to occasionally burn a CD or DVD with the important data from the My Documents folder.



The built-in Windows XP Disk Defragmenter does a decent job of keeping your drive near the top of its performance.

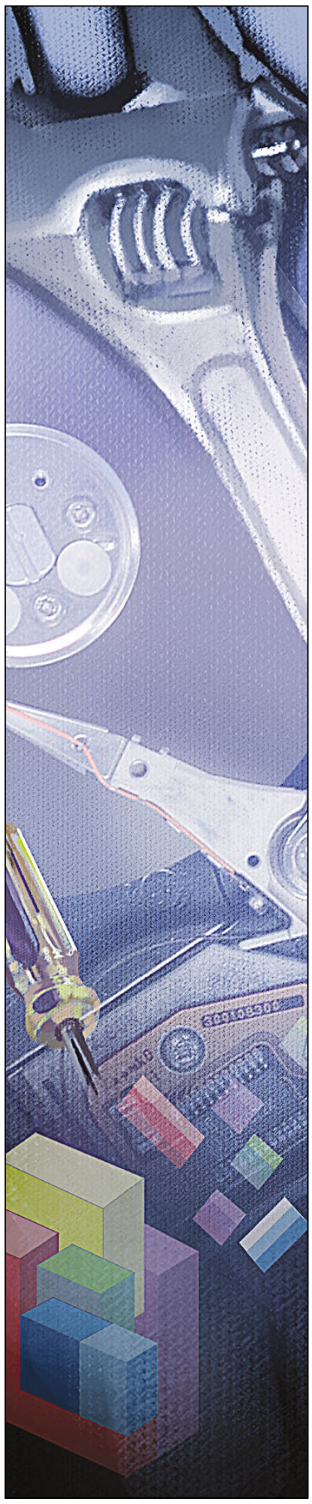
Time To Defrag

Once you have all the junk files cleaned off the drive, it's a perfect time to defragment it. The built-in WinXP defragmenter needs at least 20% of the drive free before it will even let you tidy up a drive, but ideally you should have emptied at least half the drive. That empty space improves performance by ensuring that you won't create a lot of fragmented files once you have defragmented the existing ones. To use the WinXP Disk Defragmenter, right-click My Computer and select Manage. Under the Storage item, select Disk Defragmenter. (On all versions of Windows, you can get to it by clicking Start, Programs, Accessories, System Tools, and Disk Defragmenter.) Select the drive you want to defragment and then click Defragment.

The built-in XP defragmenter does a pretty good job, but it does have some limitations. For example, it can't defragment several of the important system files that Windows uses, such as the paging or Registry files. If you regularly defragment your system, these files aren't likely to fragment very much. However, if you have been neglecting your hard drive for months or even years, these files may be in horrible shape. See the "Utility Of The Month" sidebar for applications that can help with defragmenting those files.

To keep your drive at peak performance, it's a good idea to clean out junk files and defragment at least once a week. If you use the computer lightly, you can get away with just once a month. If regular maintenance and manual tweaking isn't your cup of tea, you can purchase a commercial defragmenter such as Diskeeper or PerfectDisk that takes care of the details for you without a lot of fuss. Either way, it's important maintenance that you should take care of on a regular basis.

by Dave Methvin



The Latest Software

by Cyndy Bates Finnie

Google Desktop 3 Beta

FREE • GOOGLE • DESKTOP.GOOGLE.COM

Beta software is software that a developer makes available to the public with the intent of gathering feedback before finalizing the product. It usually has known problems that haven't been fixed yet, may lack some finishing touches such as complete documentation, and often performs slower than will the final version.

Google's beta software (which includes Google Pack, reviewed last month) is remarkably stable and ready to use. The recently released Google Desktop 3 Beta is also stable but contains a new feature—SAC (Search Across Computers)—that has generated a lot of controversy and concerns about privacy and security. While some of the concern is overblown, you should be very cautious before enabling this feature.

SAC lets you find documents on one computer from a second computer. This could come in handy when working on a laptop downstairs when you need something from the desktop upstairs. Theoretically you could also use this to find files from your work computer on your home computer, though you should check with your company's IT or technical department first.

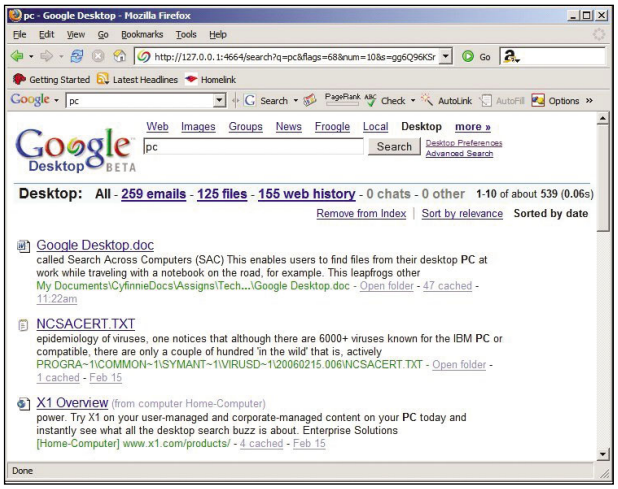
SAC works by temporarily uploading part of your document index to a Google server, which is then downloaded to your second computer. If you remember, Google Desktop writes information about files on your computer to an index, which makes it fast to find the files, or emails, as you search for them. SAC is limited to recently viewed Web pages, Microsoft Office documents, and text and PDF files from the My Documents folder. And it only includes those documents you've accessed after enabling SAC, not the entire document index, which can include email, audio/video files, chats, tasks, and contacts, etc.

Security concerns enter the picture because copies of documents on your computer or your company's computer leave the secure environment of your home network or company network to reside on a Google server. Many businesses will not want their employees using this feature because their security experts can't protect data that resides on an external server or home computer. Businesses will not want their employees uploading financial spreadsheets, performance appraisals, or other sensitive information. There is also some privacy concern as your documents could be subject to subpoena, if Google is served. (However, any documents, whether on a company's server or Google's, can potentially be subpoenaed in the same manner.) The Google Desktop privacy policy indicates documents could stay on Google's server for as long as 60 days.

Access to the SAC index is controlled by a Google account. This can be your Gmail or Orkut login, or you can establish a new account with a valid email address.

Before letting Google Desktop index the hard drive, go through and figure out what files you're most likely to want to find. Google Desktop lets you select which file types to index (email, but not chats, for example), as well as exclude files and folders (such as Recycler and Temp).

Though SAC is perhaps the most notable of the new features, it's not the only one. New plug-ins for the Sidebar are available, including job search, traffic reports, and eBay auctions. You can undock Sidebar panels and keep them anywhere on the Desktop. You can also email news items and Web clips with the click of a mouse or share them with your Google Talk buddies.



Google Desktop's Search Across Computers feature lets you find files located on one computer via another computer.

Other new features include indexing of Zip files and their contents, spelling suggestions for queries, plus an advanced search form that lets you search by file type, email sender or recipient, and date. It also has the ability to turn off indexing, either temporarily or indefinitely. Searching will still be available until Google Desktop is uninstalled and the index deleted.

To get Google Desktop visit desktop.google.com, read the Terms & Conditions and Privacy Policy items, and click the Agree And Download button. Installation is quick; indexing can take an hour or longer.

CNN Pipeline

99 CENTS/DAY; $2.95/MONTH; $24.95/YEAR
CNN • WWW.CNN.COM/PIPELINE

When it's necessary to be separated from your cable box or satellite dish and television, what's a news junkie to do? Sure there's the radio, but if you crave moving video images to go along with the day's top stories, don't despair: CNN Pipeline is here. Now you can get access to live news and video segments 24 hours a day, seven days a week. You never have to miss a breaking story again.

CNN Pipeline offers four streams of live and breaking news, along with search and on-demand news archives.

CNN Pipeline is not just Internet distribution of its cable news programming. Watchers of CNN television broadcasts will find Pipeline to be a different news service. In the way that CNN revolutionized television news 26 years ago, CNN Pipeline initiates a new era in Internet television.

First, you're not just watching one channel. The Pipeline player displays four news streams, or pipes, simultaneously in thumbnail version. You select which one to listen to and maximize.

Second, CNN Pipeline has its own news anchors who read news selected specifically for Pipeline. They introduce live and breaking news in the four pipes throughout the day, between 8 a.m. and 8 p.m. ET. After-hours Pipeline switches to live broadcast of CNN International on Pipe 1. Pipes 2 and 3 showcase CNN Newsource, the syndicated news service. Pipe 4 will feature weather updates.

Third, Pipeline is commercial-free. That's right; there are no advertisements or breaks in the news streams. In order to bring you commercial-free news, however, CNN charges a small fee for the service. You have your choice of plans: $24.95 annually, $2.95 monthly, or 99 cents per 24 hours. Signing up for either of the first two plans grants you a two-week free trial—just long enough to get you hooked.

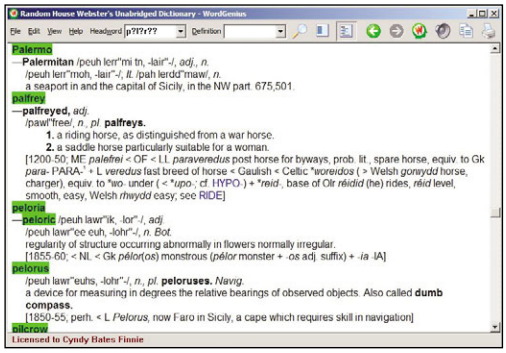
Fourth, Pipeline takes true advantage of the Internet, meaning that in addition to alerting you to breaking news, it also offers on-demand archives. You can search CNN.com's entire online video library, which goes back to about October 2004. (Red Sox fans can relive the greatest comeback in sports history after being down 0-3 in the playoffs against the New York Yankees.)

The CNN Pipeline is a downloadable video player based on Windows Media Player. As a result, the system requirements are not small. You will need Windows 2000/XP, a broadband connection, and (at minimum) Microsoft Internet Explorer 6 or Mozilla Firefox 1, Windows Media Player Series 9, and 128MB RAM. Those with Macs can use the browser-based player, which only offers a single news stream.

Random House Webster's College Dictionary
Random House Webster's Unabridged Dictionary

$19.95; $49.95 RESPECTIVELY
WORDGENIUS • WWW.WORDGENIUS.COM

With Dictionary.com available online, why does anyone need one on their computer? Well, from time to time Internet access does go out, and it might be helpful to be able to look up words and check spelling anyway. Besides, the Random House Webster's Dictionaries have at least one thing Dictionary.com doesn't: Drag-on. Just select a word in your Web page or Word document, for example, and then drag it over to the dictionary icon on your Desktop to automatically generate a definition. After the dictionary is installed, the Drag-on icon is fairly prominent on the left side of your screen, exactly where most of our applications open.



The Random House Webster's Unabridged Dictionary lets you look up words using wildcard searches.

In addition to drag-and-drop searching, you can also type words into the search box, which is somewhat obscurely referred to as "headword." The search feature supports wildcard characters, making this dictionary suitable for crosswords, though it's not fast. Searching for "p?l?r??" (where ? could be any character) took more than 30 seconds, which may not sound like a lot until you're stuck looking at your screen for that amount of time.

The Random House Webster's College and Unabridged Dictionaries also include an audio pronunciation guide. Rolling your cursor over the word's pronunciation generates an audio sample of the syllables.

To obtain either product, go to www.wordgenius.com, click the appropriate Buy Now link, click Buy Now again, read the license agreement, and complete the WorldPay form.

Corel Painter Essentials 3

$79; $69 DOWNLOAD
COREL • WWW.COREL.COM

Image-editing software and photo printers have made major inroads into photography. With even just a basic understanding, it's easy to print photos right at home, even create enlargements suitable for framing or collages of special occasions. While we can create good quality images, sometimes pictures printed at home lack the look of high-quality art. That's because studio family portraits, for example, make use of backdrops and lighting to add dimension and substance to photos. With Corel Painter Essentials 3, it's now possible to add effects like these to photos.

For those wanting to learn to draw or paint, getting started is the biggest challenge. Staring at the blank, white canvas is daunting. Painter Essentials helps you get started. The Welcome screen (which can quickly get annoying) and tutorials take you through sample projects, teaching you how to use the wide selection of artist's tools and brushes. The new Sketch Effect tool automatically creates a pencil sketch from a photo. You can then select oils, acrylics, or chalks to paint and color the image.

The new auto painting feature makes it incredibly simple to morph a photo into a painting. The hard part is choosing the brush and stroke options. The program clones the photo, preserving the original, and then goes through the auto painting process. You can also manually paint afterward to create your own look or restore some of the photo detail.

Corel Painter Essentials 3 gives home users the power to create paintings from digital photos.

Painter Essentials reads Adobe Photoshop and Photoshop Elements files (those with a .PSD extension), as well as Corel Paint Shop Pro format (.PSP), preserving image layer information. You can also save as both formats, as well as a variety of other image formats. Painter Essentials isn't for the faint of heart. It's designed to help image enthusiasts take their creativity to the next level. Die-hards will also appreciate the ability to use a pen tablet instead of a mouse to take advantage of pressure sensitive control of some of the brush effects.

To get the download version, go to www.corel.com, click Products, and look under Painter Family. A free 30-day trial version is also available.

What's Your Firewall Asking You?

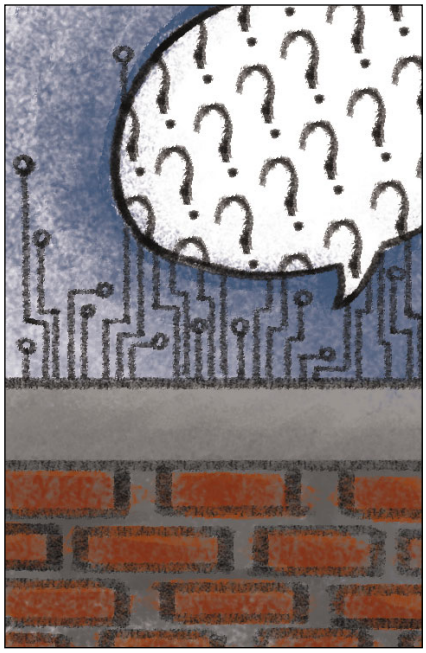
How To Know Which Programs To Allow Or Deny

"iTunes. The application indicated above is trying to access the network. What would you want to do? Allow, Deny, More Options."

This is a challenge message from Nvidia Firewall (www.nvidia.com; bundled with nForce4-based motherboards). The message popped up in the lower-right part of our display after we installed iTunes and launched it for the first time. Nvidia Firewall was acting like a guard dog, growling at someone on the front porch until its master indicates whether that person is a friend or foe.

Firewalls are security software that monitor the data trying to leave or enter a computer, such as when you launch your browser to get the latest news from CNN.com. Many have lists of "safe" and "unsafe" applications, files, and processes (files loaded into memory), which they quietly approve or block without bothering you the user. If a firewall doesn't recognize an application or process that's trying to send or receive data, it may ask you to tell it what to do. That is, unless you find and enable the setting that tells the firewall to make all decisions for you, which we really don't recommend. Hardware firewalls, such as those found in gateway routers for small office and home use, usually don't ask you these questions.

We didn't have to think twice about clicking Allow to tell our firewall to let iTunes do its thing, but with other



challenge messages, we weren't so sure. For instance when our firewall asked us whether it should allow Cli.exe or Alg.exe to access the Internet, we needed more information before we could make a decision. This article can help you figure out what to do when your own firewall needs a response.

Decisions

Many firewalls offer you more options than just Allow and Deny. Generally, you can choose to allow or deny a network access once, meaning the firewall will ask you each time the program relaunches. This setting is sometimes called Ask, short for "ask each time."

You'll also have options to always, or permanently, allow or deny the file access to the network or Web. This way, the firewall won't bug you about that process again. The words "always" and "permanently" are a little misleading because you can dig into most firewalls' settings to correct their program permissions in case you change your mind later. Often, you'll find user-friendly green check marks denoting permissions you granted and red Xs showing those you denied, as in Zone Lab's ZoneAlarm (www.zonealarm.com).

Most firewalls ask you separate questions about letting processes bring data into or letting it leave your computer, depending on what a program tries to do. In ZoneAlarm's terminology, to access is to fetch data from another computer on the Web or network, such as a server with the latest antispyware definitions for your Spybot installation. To act as a server means to allow other computers to copy particular data on your PC, such as letting a peer-to-peer network upload podcast audio files from your hard drive. You might allow your browser to always access the Internet, but you might tell it to ask you (set it to allow or deny once) on a case-by-case basis when your browser tries to act as a server.

It's pretty easy to make such decisions when your firewall tells you which application is making the request, such as iTunes in our example. But what about processes that don't sound familiar? How do you know whether Alg.exe is innocent or wicked? What does Cli.exe do anyway? And what computer are they trying to communicate with?

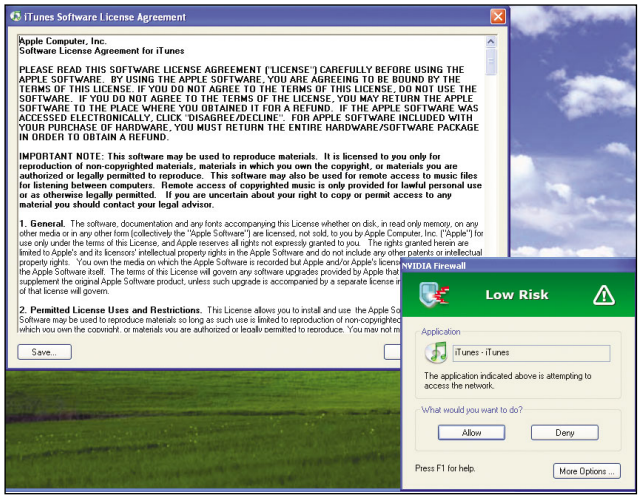
The examples we cited are pretty harmless. Cli.exe simply lets you access your ATI graphics' settings from a System Tray icon, and Alg.exe is necessary for running Windows XP.

If you just launched an application for the first time and your firewall challenges you, the new application is almost certainly the cause. Instant messaging apps, email clients, Web browsers, and security utilities that automatically check for updates all

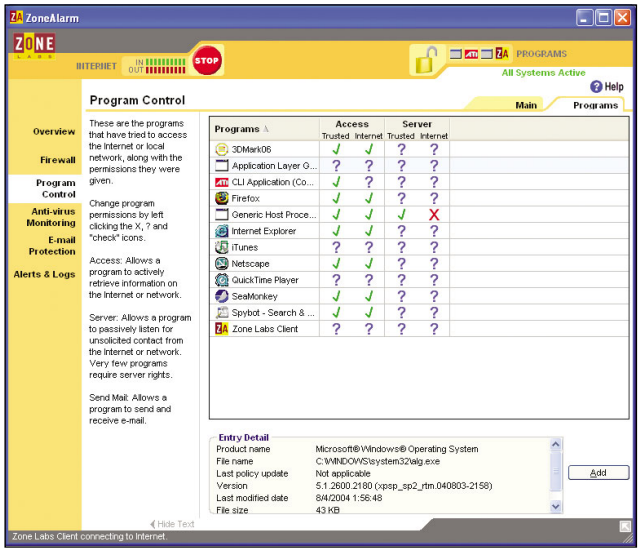
have to go online. Go ahead and allow the access if you trust the application. If you allow a process through, the firewall will continue to watch that communication channel for misbehavior, but you're really placing trust in the new program not to compromise your PC.

On the other hand, some software comes with "piggyback" applications that could be adware or spyware. Free peer-to-peer clients and online games are notorious for bundling extra apps, such as Bonzi Buddy and WhenU, and in fact, some won't operate if you remove the bundled apps.

You don't want to block a function your legitimate software needs to run, but you especially don't want to permanently approve spyware or adware. You can choose to block the process once and then see whether it keeps a "good" program from running properly. If it doesn't you might make the decision permanent the next time that challenge pops up. The more permanent decisions you make about application permissions, the fewer challenges you'll see from your firewall over time.



Here's a challenge message, or security alert, from Nvidia Firewall. A program, iTunes in this case, is trying to connect to Apple's Music Store over the Web.



Zone Labs' ZoneAlarm and some other firewall software make it easy for most users to get a bird's-eye view of the programs they allowed to access the Web and which ones they denied.

Research

Of course, you may need to do a little research to make those decisions. Some firewalls' challenge messages will try to guide you; take Nvidia Firewall's color-coded Low-, Medium-, and High-Risk ratings, for example. A few firewalls, such as Norton and ZoneAlarm, offer links to more information about a process or program to help you decide. For instance, you can click the More Info button on a ZoneAlarm challenge to pull up a Web page that may have relevant information.

Nvidia Firewall can tell you the manufacturer, file path, and description of every file it challenges. Simply click More Options when a challenge appears. If your firewall doesn't give you these details, try searching for the process name in Windows. In WinXP click Start and select Search. Choose All Files And Folders and set the Look In field to Local Hard Drives. If no results come up, you want to click Include Hidden And System Folders. (By default, WinXP doesn't search system files.)

After you locate the file, such as Alg.exe, look at the folder and its subfolders, such as C:\WINDOWS\SYSTEM32\, in which the file is located. In most cases one of those folders will tell you the name of the application the file belongs to. In this case it's a Windows file, and you should allow the connection. However, any malware or virus could plant files in another application's folders, so you should also try looking up that file on a trusted security site, such as ProcessLibrary.com or Symantec's Security Response Web site (www.sarc.com).

You can also look up files, apps, and processes on your favorite search engine, such as Google or Yahoo! Search. Look for descriptions of the file or perhaps forum posts from other users who have encountered a firewall challenge for the same process. If you see any exhortations to "go ahead and allow this harmless process," consider the source and take it with at least a few grains of salt, especially if it seems like an ad.

Note that recent threats may be too new to appear on the Web. Security companies may not have fully explored and written up a new threat, and Google's automated bots may not have uncovered references to it on forums or sites. If you're really in doubt, try denying network access to that program until more information about it appears in a week or two.

Finally, keep your antivirus and antispyware up-to-date and actively protecting your system. Even if you make a mistake and allow malware (perhaps its masquerading under a trusted file name) to phone home, your firewall and other security software might block any monkey business by the way the malware behaves. by Marty Sems

Wireless Internet Connection Problems

As the business traveler is inundated with airport terminals, coffee shops, and hotels offering public wireless Internet, you may find that locating a hotspot is the easy part. If you find yourself floundering while trying to connect, try these troubleshooting tips. by Andrew Leibman

GO HOTSPOT HOPPING

If several hotspots exist in the same general vicinity, you may need to specify the network to which you want to connect. To view the available wireless networks, right-click the Network Connections icon in the System Tray and click View Available Wireless Networks. Click Advanced to open the Wireless Network Connection Properties dialog box. Next, select the wireless network's SSID (Service Set Identifier) from the list of available networks that appear on the Wireless Networks tab.

Click the network you want to connect to and select the Allow Me To Connect To The Selected Wireless Network, Even Though It Is Not Secure checkbox. Next, click the Connect button at the bottom of the dialog box to continue. If you aren't sure which network you want to connect to or you don't see the network you're looking for, click the Advanced button. From this dialog box you can rescan for the available wireless networks by clicking Refresh.

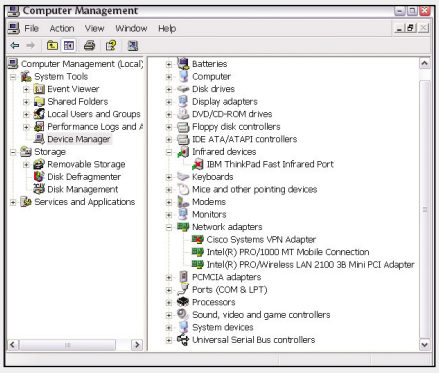
Windows 2000 users don't have a utility designed to detect and configure wireless networks. As a result you'll need to use the software that came with your wireless adapter or an application provided by the wireless IP. For example, if you have Intel's PRO/Wireless network adapter and the PROSet profile management software, you can double-click the Intel PROSet icon and select your wireless adapter from the left pane of the General tab. Click the Networks tab and click Scan. A list of Available Networks appears and displays the SSID names of the available networks. Select the network from the list and click Connect.

DOES YOUR OS HAVE THE RIGHT SUPPORT?

Make sure your operating system is up-to-date. Most wireless IPs only support a limited number of OSes or just specific versions of a particular OS. Depending on the wireless IP, some browsers are not supported and may not properly display the splash page, the Web page that lets you sign in to the hotspot's Internet service. Check with the wireless IP offering the hotspot for details on which browsers it recommends for best viewing.

CONNECTION CHECKLIST

Before trying to connect to a hotspot, make sure you have the correct hardware. Most newer notebooks come with integrated wireless adapters. If you have an Intel Centrino notebook, then you have an 802.11b or 802.11g wireless adapter and should have little trouble connecting to most



public hotspots. If you're not sure, check your device for an 802.11-compliant WLAN (wireless local-area network) adapter.

Some wireless-capable devices state the 802.11-compliance on the bottom or back of the device. You can also check whether you have a wireless adapter by consulting the Device Manager. If you're using Windows XP, click Start, right-click My Computer, and select Manage. Click Device Manager from the left pane to see a list of the devices installed on your system. Win2000 users can right-click My Computer, click Properties, and then select the Device Manager tab. Look for the Network Adapters item. Click the plus sign in front of the network adapters to expand a list of your installed network devices. You should see a wireless adapter, but if you don't and your notebook has a PC Card slot, then you can add wireless Internet capabilities with a PC Card or a mini-PCI WLAN card.

MAKE SURE YOUR ADAPTER CAN "TALK" WITH THE HOTSPOT

The next step in troubleshooting your connection is to make sure your wireless adapter can "talk" to the hotspot. To use a particular wireless Internet connection, your hardware must be compliant with the hotspot's hardware. For example, if your notebook has an 802.11b wireless adapter, you can connect to other 802.11b or backward compatible 802.11g hotspots. The same notebook can't connect to an 802.11a hotspot, however, because that specification isn't backward compatible with 802.11b/g devices.

To get your WLAN adapter to communicate with the hotspot hardware, your adapter must be turned on. The Wireless Network Connections icon in your System Tray will appear to be communicating if the adapter is working properly. If an X appears over your wireless adapter icon in the System Tray, then the device isn't enabled. Right-click the Network Connections System Tray icon, click Open Network Connections, and double-click Wireless Network Connection to enable your device's WLAN adapter. If there isn't a Network Connections icon in the System Tray, WinXP users can access the Network Connections by clicking Start, Control Panel, and double-clicking Network Connections. If you're using Win2000, click Start, select Settings, and then click Control Panel. Double-click Network And Dialup Connections, right-click your wireless network connection, and select Enable.

WinXP users may see a pop-up balloon stating that no wireless networks are available. After about a minute, another pop-up should appear stating that one or more wireless networks are available. Click the balloon to see the Wireless Network Connection dialog box and a list of available wireless networks, as SSIDs. The SSID is a name that identifies a specific network.

JUST LAUNCH A BROWSER

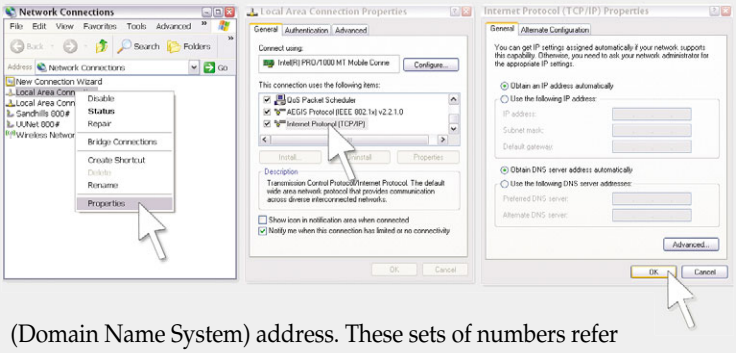
If your wireless adapter is communicating with the hotspot, then often all you need to do is launch a Web browser. Sometimes you'll need to sign in on the wireless IP's login page. You may also need a valid credit card, depending on whether the wireless IP charges a fee for its service.

CHECK YOUR DRIVERS

From the Device Manager, you can check the status of your WLAN drivers to make sure the device is working properly. If the Device Manager shows a yellow circle and an exclamation point next to your wireless adapter, then your wireless adapter may not be properly installed. Right-click the adapter in question, select Properties, and look at the Device Status box on the General tab to see that the adapter is working properly. If necessary, select the Driver tab in the Properties dialog box to access controls that let you uninstall or update the driver. If you see a red X by your wireless adapter, the device is either disabled or your system can't recognize it. Right-click the adapter and select Enable. If this doesn't eliminate the red X, then you may need to replace your wireless adapter.

HOW TO ENSURE A PROPER CONFIGURATION

Oftentimes, you can encounter connection problems simply because your notebook isn't properly configured. You need to setup your notebook to automatically obtain an IP (Internet Protocol) address and DNS



(Domain Name System) address. These sets of numbers refer to the address of a computer on a network and the system for translating IP addresses into domain names. Your wireless device must be able to determine both addresses in order to connect to a hotspot.

If you're using WinXP, you can configure your device by right-clicking the Network Connections icon from the System Tray and then clicking Open Network Connections. Right-click Local Area Connection and select Properties. Scroll to and select Internet Protocol (TCP/IP) and then click Properties. Open the General tab and select the Obtain An IP Address Automatically and Obtain DNS Server Address Automatically radio buttons. Click OK when you're done.

Win2000 users can click Start, select Settings, and click Network And Dialup Connections. Next, right-click the wireless LAN connection, click Properties, scroll to and select Internet Protocol (TCP/IP), and then click Properties. On the General tab, select the Obtain An IP Address Automatically and Obtain DNS Server Address Automatically radio buttons. Click OK to close the dialog box.

Identity Theft

Identity theft wreaks havoc in people's lives every day. In some of the worst cases, victims have been refused loans, lost their jobs, or been arrested for crimes they didn't commit. Innocent people of all ages are becoming victims of this horrible crime on a daily basis.

According to the FTC (Federal Trade Commission), "Identity theft occurs when someone possesses or uses your name, address, Social Security number, bank or credit card account number, or other identifying information without your knowledge with the intent to commit fraud or other crimes." Fortunately, there are things you can do that will make you a less attractive target.

by Jennifer Johnson

INACCURATE CREDIT REPORT

New accounts opened by a thief are likely to show up on your credit report. Review your credit report for accuracy at least once a year. You're entitled to a free credit report from each of the three major credit bureaus (Equifax, Experian, and TransUnion) once a year through AnnualCreditReport (www.annualcreditreport .com).

BEWARE OF PHISHING ATTACKS

Phishing scams occur when a con artist impersonates a bank, credit card, or ecommerce company and sends you an email asking you to give them your personal information. Although these emails may appear to be real, they aren't.

MISSING BILLS

Keep track of when your bills should arrive; a missing bill can be a sign that a thief has changed the billing address to cover his tracks. Before paying a bill, examine it to make sure all charges are accurate and report unauthorized charges immediately.

STRANGE PHONE CALLS

If you receive calls from collection agencies regarding debt you did not incur, remain calm and find out more information about the charge. Document the call and check into the charges immediately. Don't give the caller your bank or credit card information to pay the bill, as this could cause additional problems if the caller is not legit.

CREDIT SIGNS

Receiving credit cards that you didn't apply for, denial of credit, or less-favorable credit terms for no apparent reason can also signal identity theft. Check your credit reports to discover the extent of the theft.

CLOSE ACCOUNTS

To minimize financial damage, close all accounts the thief has tampered with or fraudulently opened, including bank and credit card accounts. Place passwords on any new accounts you open but don't use easily identifiable words or numbers.

A VALUABLE NUMBER

Make sure you protect your social security number whenever possible. Don't keep your social security card in your wallet and make sure your number does not appear on insurance cards or other information you carry.

SHRED OR DESTROY

It's wise to shred paperwork that contains personal information before throwing it away, especially preapproved credit card offers.

OPT OUT

To limit the disclosure of your personal information, contact your banks, mortgage brokers, and the three major credit bureaus to tell them you want to opt out of programs that share personal information. The Direct Marketing Association's Mail Preference Service lets you register to receive less commercial advertising mail.

WHEN IT'S TOO LATE . . .

If you're already a victim of identity theft, take immediate steps to correct your records. Make sure to document every telephone call and follow up in writing using certified mail, return receipt requested. Never send original documents and always keep a copy of letters refuting charges.

FILE A POLICE REPORT

Many organizations require proof that you are a victim of identity theft in the form of a police report. If you know where the fraudulent actions occurred, contact the authorities in that community; otherwise, contact your local authorities.

BE NOSY

If someone asks for your personal information, find out what it will be used for and why he needs the information. Be extra cautious when giving out information over the phone if you did not initiate the conversation. Don't be afraid to hang up the phone and call back at a phone number corresponding to your bill to verify the caller's legitimacy.

TELL CREDIT AGENCIES

Contact any one of the three major credit-reporting agencies mentioned previously to report fraud. They will place a fraud alert on your credit report and notify the other two agencies. This alert will tell creditors that they must contact you before authorizing any changes to your accounts or opening new accounts. You'll also receive all three credit reports at no charge. Check your credit report every three months in the first year of the theft and once a year thereafter.

TELL THE FTC

Filing a report with the FTC helps with fraud investigation and can help with investigations across multiple jurisdictions. The information can help policy-makers and businesses create better remedies and prevent identity theft. An ID Theft Affidavit from the FTC may also help in disputing charges.

Important Contact Information

Becoming a victim of identity theft is traumatic. If you find yourself in this position, here are some Web sites and phone numbers that may help.

Get Credit Reports

AnnualCreditReport
www.annualcreditreport.com
(877) 322-8228
Free credit reports.

Equifax
www.equifax.com
Order report: (800) 685-1111
Fraud alert: (888) 766-0008
Credit reporting agency.

Experian
www.experian.com
(888) 397-3742
Credit reporting agency.

TransUnion
www.transunion.com
Order report: (800) 888-4213
Fraud alert: (800) 680-7289
Credit reporting agency.

Opt Out

Direct Marketing Association Consumer Assistance
www.dmaconsumers.org/offmailinglist.html
Indicate mail preferences.

Opt-Out Prescreen
www.optoutprescreen.com
(888) 567-8688
Opt out of preapproved credit or insurance offers.

Investigate

Certegy
www.certegy.com/ContactUs.html#USCONSUMER
(800) 437-5120
Determine if anyone is writing fraudulent checks on your account.

Chex Systems
www.consumerdebit.com/consumerinfo/us/en/consumerreports/index.htm
(800) 428-9623
Obtain a consumer report about checking accounts in your name.

Internal Revenue Service
www.irs.gov/compliance/enforcement/article/0,,id=106778,00.html
Criminal Investigation Informant Hotline: (800) 829-0433
Find out if someone has filed a tax return in your name.

TeleCheck
www.telecheck.com
(800) 710-9898
On the Web site, click Consumer and Check Fraud/Forgery to find out if anyone has used your driver's license or ID to write fraudulent checks.

Report Other Problems

SCAN
(800) 262-7771
Call this hotline to find out if an identity thief has been writing bad checks in your name.

Social Security Administration Office of the Inspector General
www.ssa.gov/oig/guidelin.htm
(800) 269-0271
Report fraudulent use of your social security card to obtain benefits.

U.S. Postal Inspection Service
www.usps.com/websites/depart/inspect/fraud/welcome.htm
To report stolen mail or a fraudulent address change, look in your local phone book for the nearest Postal Inspector or go to this Web site.

Report Credit Card Fraud

American Express
https://www124.americanexpress.com/cards/home
Card replacement: (800) 992-3404
Customer service: (336) 393-1111
On the Web site, click Customer Service to find links to initiate a report.

Bank of America
www.bankofamerica.com
(800) 848-6090

BankOne/Chase
www.bankone.com
Credit Card Services Fraud Operations: (800) 686-5657
On the Web site, click Protect Your Family From Identity Theft.

Citibank
www.citicorp.com/domain/contact
(800) 627-3999

Discover Card
www.discovercard.com/discover/data/faq/about_your_account.shtml#loststolen
(800) DISCOVER (347-2683)

MasterCard
www.mastercard.com/cgi-bin/emergserv.cgi
(800) MC-ASSIST (622-7747)
Report lost or stolen credit card:
(636) 722-7111

Visa
www.usa.visa.com/personal/security/need_help_now.html
(800) 847-2911
(410) 581-9994

Wachovia
www.wachovia.com/helpcenter/page/0,,5184_5274,00.html
(800) 477-9131

Wells Fargo Bank
www.wellsfargo.com/help/index.jhtml
(866) 867-5568

Additional Resources

Call For Action
www.callforaction.org

Federal Trade Commission ID Theft
www.consumer.gov/idtheft
(877) IDTHEFT (438-4338)

Identity Theft Resource Center
www.idtheftcenter.org

Privacy Rights Clearinghouse
www.privacyrights.org

Motion Sickness

IF YOU SUFFER FROM MOTION SICKNESS when you travel, you're not alone. About one-third of the population is susceptible to motion sickness, even during uneventful trips, and another one-third is afflicted when they encounter more extreme conditions, such as air turbulence, bumpy roads, and choppy waters.

Medical researchers can't pinpoint why some people struggle with motion sickness while others can stomach just about anything. They do know that certain groups of people, such as pregnant women and young children, are far more prone to motion sickness than the general public.

So while we wait for scientists to conduct further research, we can take action based on what we already know. Understanding what motion sickness is, what causes it, and what are legitimate treatments for it will help you travel with confidence.

by Rachel Derowitsch

CONFLICTING MESSAGES

Motion sickness is the result of your central nervous system receiving mixed messages from sensors in your body that detect motion relative to your body's position. Working together, those sensors, or receptors, give you a sense of balance.

For example, sensors in your inner ears detect rotation and different types of acceleration. When the plane you're riding is roaring down the runway, your inner ears may tell your brain that you are accelerating vertically; but your eyes, perhaps glued to the back of the head of the passenger in front of you, tell your brain that you're not moving at all. Sensors in your skin, muscles, and joints may also be sending mixed signals.

The result of all these conflicting messages can be one or a combination of nasty side effects. It may start with the color draining from your face, or you may break out in a cold sweat. You may start to feel dizzy or nauseated. And in extreme cases, you may drool, faint, or vomit.

TAKE YOUR MEDS

A variety of prescription and over-the-counter medications have been proven to relieve travelers from motion sickness symptoms. Your choice of medication depends on the length of your trip, the severity of your symptoms, your current health and what prescriptions you are taking, and your ability to handle possible side effects from the medication. Prescription medication will work longer but may result in more severe side effects than over-the-counter medications.

One very effective medication is scopolamine, which is available in oral and patch forms. Oral scopolamine works for about six to eight hours, while the dime-size patch, Transderm Scop, can work for three or four days; ideal for long trips. If taking motion sickness medicine orally, do so at least one hour before traveling. And if you apply a patch, put it on several hours prior to departure.

If nausea is your primary side effect while traveling, then an antihistamine may work for you. Antihistamines counter the effects of histamines at receptor sites on your body. Though often used to treat the effects of colds and allergies, the following are also used to treat motion sickness: promethazine (found in Phenergan), diphenhydramine (found in Benadryl), meclizine (found in Antivert and Bonine), and dimenhydrinate (found in Dramamine).

A different prevention for nausea is applying pressure to or electrically stimulating the P6 pressure point just above the wrist. The FDA-approved ReliefBand ($99.95; www.reliefband.com) is a battery-operated, watch-like device that stimulates the underside of your upper wrist.

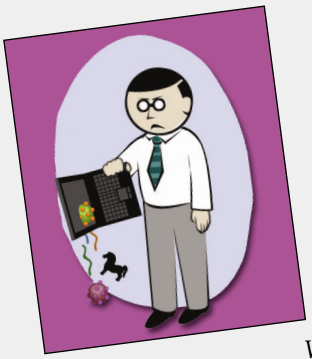
TIPS FOR TRAVELERS

In addition to, or instead of, using the following remedies, you can take action to minimize or stave off motion sickness.

- Before you travel, avoid salty, greasy, or spicy food, plus caffeine and nicotine.
- Don't read or watch a video while traveling. Instead, if possible, focus on something in the distance. If you're on an airplane, try to get a window seat so you can gaze outside of the plane. If you're in a car or train, try to get a seat as near to the front as possible. Don't face the rear. If you're on a ship, go outside or to a window so you can look at the horizon.
- Keep your head as still as possible.
- Relax. Stress can worsen the symptoms.
- Get fresh, cool air. When traveling by plane, direct the overhead vent on you. Also, take along or request a cold compress to stay cool.
- If you are suffering from extreme side effects, lie down if at all possible.

Before your next trip, practice these tips, and if necessary, try one of the listed medications. You may just find the skies friendlier to fly.

Malware-Infected Notebook



ANYONE WHO has run into trouble with his laptop while on the road knows how agonizing that can be. After you reach another state (or country) and your laptop no longer functions correctly, there's not much you can do. Or is there?

Windows XP introduced many stability improvements when it hit the market in late 2001. Compared to Windows Me, it's generally much easier to install hardware on a WinXP machine. Although it's possible to bring down the OS, WinXP also generally survives misbehaving applications. Unfortunately, as the Internet became more and more popular, people started running into spyware, email viruses, and break-in attempts. Business travelers experience this dilemma on an increasingly frequent basis, as well.

We will show you tricks for keeping your laptop in top-running condition while you are away on your trip. We will also tell you how to deal with one of today's popular technical support issues: removing malicious software that can ruin your computing experience, even if you cannot reach your company's technical support. by Jamie Lendino

USE THE WINXP TASK MANAGER

If your computer seems to respond much slower than usual or if your notebook's hard drive is running constantly without any apparent reason, press CTRL-ALT-DELETE to bring up Windows Task Manager.

We're most concerned with any unusual processes that are consuming your CPU power and bogging down your machine. Click the Processes tab and double-click the CPU heading twice to sort the long list of processes according to the amount of CPU power they're currently using.

When your computer is idle, you want to see System Idle Process at the top of the list, consuming 95% or more of your CPU. This is actually a misnomer because it means that your computer has more than 95% of its processor free. If malware is afflicting the performance of your system (or even if one of your applications simply crashed), you'll see that near the top.

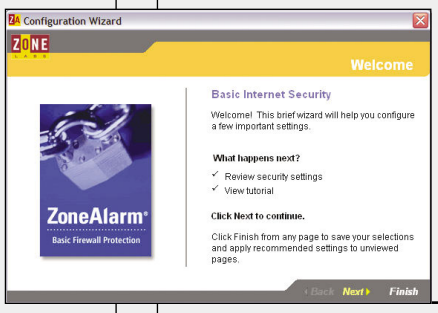
Select the offending process and click the End Process button. A dialog box appears, warning that you could lose date if you proceed. Click Yes to continue. The OS will make an attempt to end the offending process. If you are lucky, Windows will close the application, and your system should suddenly become more responsive.

UPGRADE YOUR SOFTWARE FIREWALL

Zone Labs ZoneAlarm (free for individual use; www.zonelabs.com) is a powerful firewall that is superior to the one built into WinXP. Before downloading ZoneAlarm, Zone Labs offers you a chance to scan your PC for spyware. An extra scan doesn't hurt, so take advantage of this option. After the spyware check is completed, download the ZoneAlarm installer and follow the on-screen prompts.

The WinXP firewall only protects attackers from breaking into your machine. Although the firewall does a decent job at that, it doesn't do anything to prevent attacks from going in the other direction. By installing a third-party firewall, such as ZoneAlarm, you'll prevent any malicious software from using your PC to go back out to the Internet and launch spam attacks, DoS (denial of service) attacks, or whatever else.

Some of the same vendors we mention later make firewall software in addition to antispyware and antivirus programs. Notable options include McAfee Personal Firewall (www.mcafee.com), Norton Personal Firewall 2005 (www.symantec.com), and Sygate Personal Firewall Pro (www.sygate.com). F-Secure (www.f-secure.com) and BitDefender (www.bitdefender.com), along with the others, integrate a firewall into full-featured Internet Security packages; something to look into once you're safely back in the office.



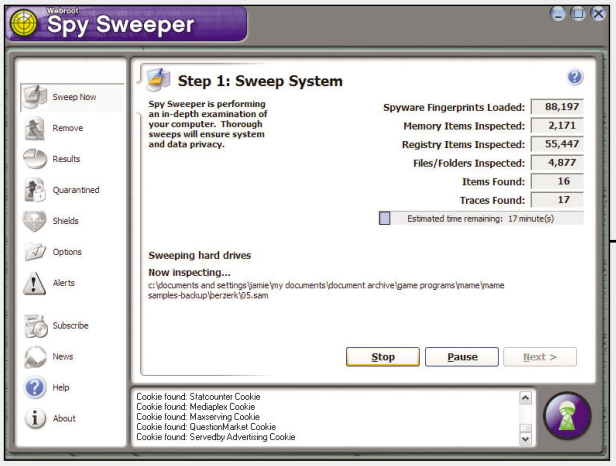
Zone Lab's ZoneAlarm Configuration Wizard will help you quickly set up its free firewall software on your PC. You'll need this in order to prevent malware on your machine from going back out to the Internet to launch attacks.

If you're using your system at home to access your network at work, consider installing an inexpensive broadband router. This router will help you network all the machines in your house, but more importantly, the router comes with built-in hardware firewalls that offer you additional protection, similar to what you might have at work. This is in addition to the software firewall installed on your machine (either the one you received with WinXP SP2 or a third-party firewall).

ANTISPYWARE TOOLS

As in the antivirus section, a lot of antispyware programs work similarly. One program we suggest you consider is Spybot Search & Destroy (free; www.safer-networking.org), which is one of the best free spyware utilities. Go to the Spybot S-D Web site and download the application from one of the many FTP mirror sites. When you first install and start up the program, click Create Registry Backup in order to preserve your settings in case the program removes something necessary for your computer to function. This takes a few minutes to run.

After the Spybot S-D installation is complete, click Search For Updates, select all the updates that appear, and click Download Updates in order to make sure Spybot is aware of the latest spyware. Under Search & Destroy, click Check For Problems and, if necessary, click Fix Selected Problems in order to remove any spyware the program finds immediately.



Webroot's Spy Sweeper, while not free, is an effective antispyware tool. This screen shows Spy Sweeper's progress as it scans our test system's C: drive.

Webroot Spy Sweeper (free to try, $29.95 to buy with one-year subscription; www.webroot.com), although it is not free, is another good spyware utility with more comprehensive definitions. Alternatives include Lavasoft Ad-Aware SE (www.lavasoftusa.com), McAfee AntiSpyware (www.mcafee.com), and Spyware Doctor for Windows (www.pctools.com).

It pays to have a couple of antispyware utilities available because spyware is an emerging threat, and everyone races to develop effective blocking techniques. You'll most likely find that one antispyware program removes spyware that another one misses, and vice versa. This only applies to antispyware, however. If you run multiple antivirus or firewall programs simultaneously, you can run into a lot of problems on top of the trouble you're already experiencing.

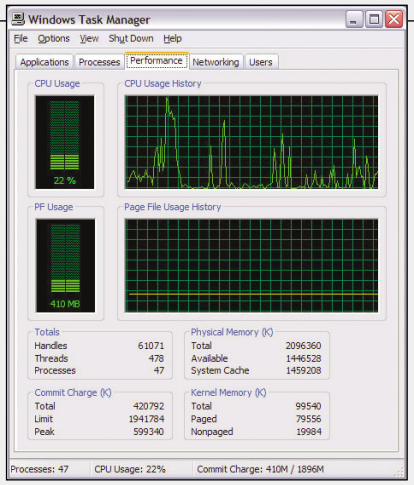
FIND FREE ANTI-MALWARE PROGRAMS

If you bought a computer recently and did your research, you probably heard that the moment you connect to the Internet, your new machine is vulnerable to attack. Fortunately, WinXP Service Pack 2 was a big step in the right direction. It includes a free firewall and has dozens of security improvements designed to protect your PC. However, you still need antivirus software, antispyware software, and a better firewall than the one WinXP SP2 provides.

We searched the Internet and found several free anti-malware tools worth trying out. We look at these programs a little closer in the following pages. Check out the programs, download any you like, and make sure they run well on your computer. If you're reading this article before you leave on your trip, you can even make an emergency disc in case the worst happens and you can't boot your notebook while on the road. (See the "Other Helpful Tips" section for more details on this.)

There are also online scanners you can use to search your PC for viruses and spyware. These scanners are handy if you can still connect to the Internet using your notebook but you are having trouble installing software. If you're using Mozilla Firefox or another third-party Web browser, you'll have to fire up Internet Explorer. Some of the online scanners use ActiveX controls that only work in Microsoft's browser.

Many of the programs we looked at in depth are free for individual use but require fees for installation on corporate and educational systems. Even so, most anti-malware software offer free trial versions of the programs, so you can make sure a program works on your PC before you pay for it. After you return to the office, check with your IT department and find out what you can do to keep your system protected in the future while honoring any licensing agreements from each software vendor.



The Task Manager's Performance tab can tell you at a glance how your system is performing. If your CPU Usage is abnormally high even when your computer is idle, malware could be the culprit.

DOWNLOAD & INSTALL ANTI-MALWARE UTILITIES

Most anti-malware vendors detail how to properly download software on their Web sites. With most programs, you will want to download the installer program from the vendor's server to your Desktop. The programs almost always come in the form of compressed archives, which speeds up the download process and means you only download one file.

When the download is complete, double-click the icon to install the program. Depending on the product's vendor, you may need to double-click the Setup.exe file in the expanded folder; other times the install will begin automatically.

Follow the manufacturer's prompts to install the software on your computer. After completing the installation, Windows places an icon for the program in the bottom-right corner of your Task Bar. This means the program will run and stay resident in memory. This is a good thing for now because you want the most protection possible while you're trying to fix your problem.

OTHER HELPFUL TIPS

The moment you're able to get into your system and it's responding to your input at least somewhat, copy all of your important Word, Excel, and other documents to a flash (or USB) drive. After you safely store your data on a device that's separate from your laptop, it no longer matters what happens with the computer. Hopefully you'll be able to restore the machine to good running condition, but if you can't, at least you can take your documents to another computer and work on the necessary files.

If you're lucky enough to be reading this article from the comfort of your home or office while your laptop is in good working order, now is the time to set up an emergency kit. A flash drive is easier to carry than a blank CD, you can periodically update it with the latest anti-malware programs (something you can't do with a CD-R), and you can even plug it into ultra-portable notebooks that don't have built-in CD drives.

You'll also need a free virus scanner, at least two antispyware programs, and a free firewall. While you're at it, place a copy of a free browser (such as Mozilla Firefox) on the key. This way you can browse the Web from the key in case something happens to the built-in browser on your laptop.

ANTIVIRUS SOFTWARE

Many of the free antivirus programs we found online perform similarly. Rather than go into detail for each program, we chose one program to explain in-depth. We suggest checking out the product Web sites for the other products we mention at the end of this section.

If you are looking for a simple yet powerful virus checker, consider ALWIL Software's avast! 4 Home Edition (free for individual use; www.avast.com). The first time you fire up avast! 4, the program scans your system's memory for viruses. You will want to take care of anything the program detects during this scan; however, you'll also want to scan your entire hard drive for viruses, as well. To do this, click the folder icon in the main interface and select each of your laptop's hard drive partitions. Next, click the Start button (it resembles a CD player's Play button) on the left side of the avast! 4 screen.

When using your computer on a daily basis, avast! 4 holds seven modules resident in memory, protecting your computer from WinXP viruses, Outlook mail, Internet Explorer malware, and so on. It's a good idea to have a program, such as avast! 4, Symantec's Norton AntiVirus ($49.95; www.symantec.com), or another highly rated program running at all times. These programs consume a bit of memory and CPU power on their own, but you will most likely never notice the CPU hit.

Other free antivirus programs you should consider include BitDefender, Grisoft's AVG line (www.grisoft.com), Panda Software's ActiveScan (www .pandasoftware.com) online scanner, and Trend Micro's HouseCall (housecall.trend micro.com) online scanner.

SET A SYSTEM RESTORE POINT

If you're still stuck, you will want to try rebooting your laptop. If this doesn't clear the problem and your system still runs slow even as you log in after a reboot, it's time to dig deeper.

Before you continue, you should create a System Restore point, so as to preserve WinXP in its current state, prior to installing any new software. If you have System Restore enabled all the time, it will create a restore point every 24 hours if your system is idle. Even if System Restore is enabled, we suggest creating a new restore point now before you begin your system recovery.

. . . you should create a System Restore point, so as to preserve WinXP in its current state . . .

To enable System Restore, open the Start menu, click Control Panel, select System, and click System Restore. In the System Restore dialog box, see that there is no check mark in the Turn Off System Restore On All Drives checkbox. To set a System Restore point, open the Start menu, point to All Programs, select Accessories and System Tools, and then double-click System Restore. You can choose to Restore Your System To An Earlier Time or Create A Restore Point; select the latter option and click Next to continue. Name your System Restore point and click Create to begin. The process will take a few moments to complete.

The Delayed Traveler

by Marty Sems

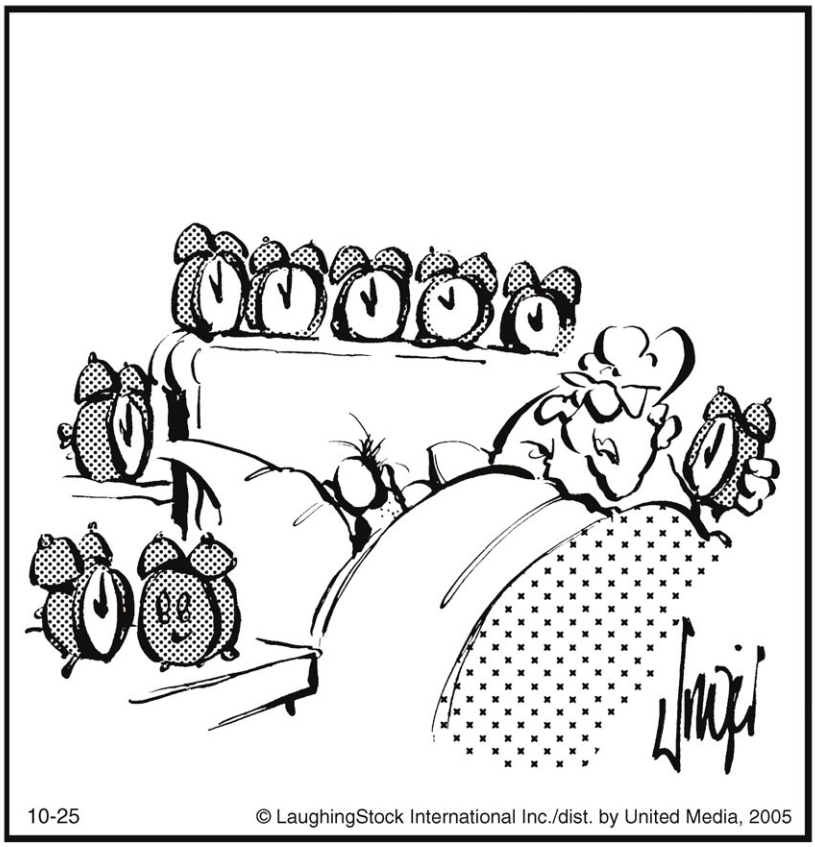
Admit It, This Is The First Page You Turned To

Are These Slippers Full-Speed Or Hi-Speed?

USBあったか手袋、USBあったかスリッパ、USB CAFE PAD with HUBが三点セットになって、USBあったか三昧 新登場！

大好評の「あったか手袋の姉妹品」、発売前からテレビで紹介されたり、お問い合わせを多数いただきました「USBあったかスリッパ」の登場です！！ もちろんサンコーお得意のＵＳＢグッズ、今回もUSBに接続すれば、あらあら不思議じんわりと足もとが暖かくなってくるんです！

In case your hotel room starts to feel as cold as a hovel in a Dickens novel, throw another coal on the fire the high-tech way. Various Asian resellers such as the Rare Mono Shop (www.thanko.jp/usbslippers_dual; in Japanese) are hawking slippers that are electrically heated via USB. We're not kidding. Burrow your tootsies into their fuzzy embrace and then slap their cable connector into your laptop's USB port. These may be hard to get here, but they're selling for about $34 in Japan, or $72 when bundled with a USB mitten and mug warmer.



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"Only *you* would book a flight at 4:30 in the morning."

Got Juice?

As you travel—or worse, wait to travel—your portable electronics can be worth their weight in gold as diversions. But when their batteries run down, you could be in a world of tedium. Here are some manufacturers' estimates of battery life for their popular gadgets.

RIM BlackBerry 8700r	Standby: 16 days Talk Time: 4 hours
Palm Treo 650	Standby: Up to 300 to 336 hours Talk Time: Up to 6 hours
Apple PowerBook G4	5.5 hours
Sony Vaio FE590GC	2 to 4 hours
Apple iPod nano	Up to 14 hours

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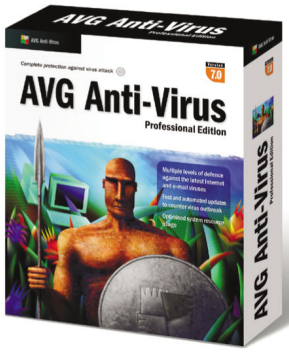

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